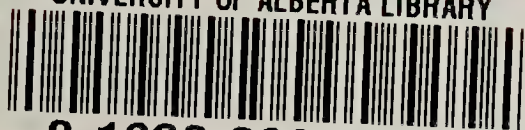


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BLUE JAY

September 1995



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In Memoriam

**SASKATCHEWAN CHRISTMAS BIRD AND
MAMMAL COUNTS — 1995**

The dates for the Christmas Bird and Mammal counts this year are **Saturday, 9 December 1995 through Tuesday, 2 January 1996** inclusive. Count area should be a circle 24 km (15 mi.) in diameter. Count area must be a minimum of three hours in duration. An information package, including count forms, will be mailed to all previous count compilers in early December. Anyone wishing to initiate a new count should contact:

Wayne C. Harris
Box 414, Raymore, Saskatchewan S0A 3J0
Phone (306) 746-4544 (answering machine)
Fax (306) 746-4519

All counts must arrive by **Monday, 15 January 1996** to be included in the compilation of bird and mammal count results.

CONSERVATION

PARTNERS IN PROGRESS

J. GAYE MORRIS, Alternate Ed. Div. III, Weyburn Junior High School, Weyburn, SK.

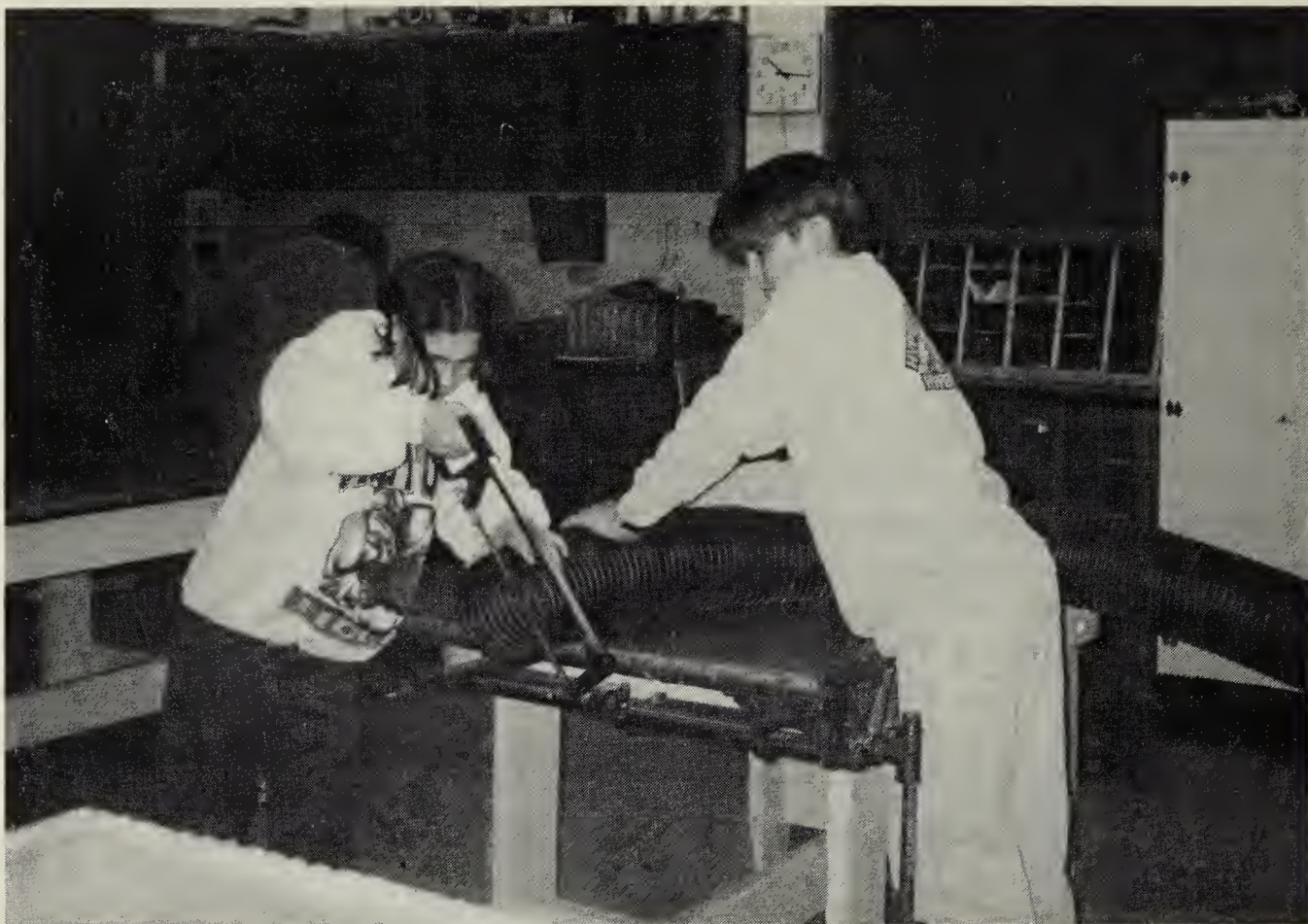
In the autumn of 1994, a group of Weyburn Junior High students were studying endangered species as part of their English program. The students took a particular interest in the plight of the Burrowing Owl. Many of the students had seen this species in the rural areas surrounding Weyburn, and during classroom discussion an idea was spawned to investigate the possibility of assisting in the conservation of the Burrowing Owl.

Several students expressed the motivation which prompted their involvement. Perry Benning, age 15, said "I want the Burrowing Owls to have a safe home." Brent Chinski, age 14, stated "We are building the boxes because the owls need their

habitat. Right now it's being destroyed by pesticides and by cities that are getting bigger." Derek Littlejohn, age 15, expressed the sentiments of all students when he said "I think it's important for kids to get involved. Making the boxes during Industrial Arts is perfect — we learn about woodworking and help the owls at the same time."

I contacted Heather Dundas, Program Coordinator at Nature Saskatchewan, and the wheels were set in motion to form a partnership which would be beneficial to both the students and the Burrowing Owl. With funding from a Nature Saskatchewan Members Initiatives Grant, the students constructed 15 Burrowing Owl

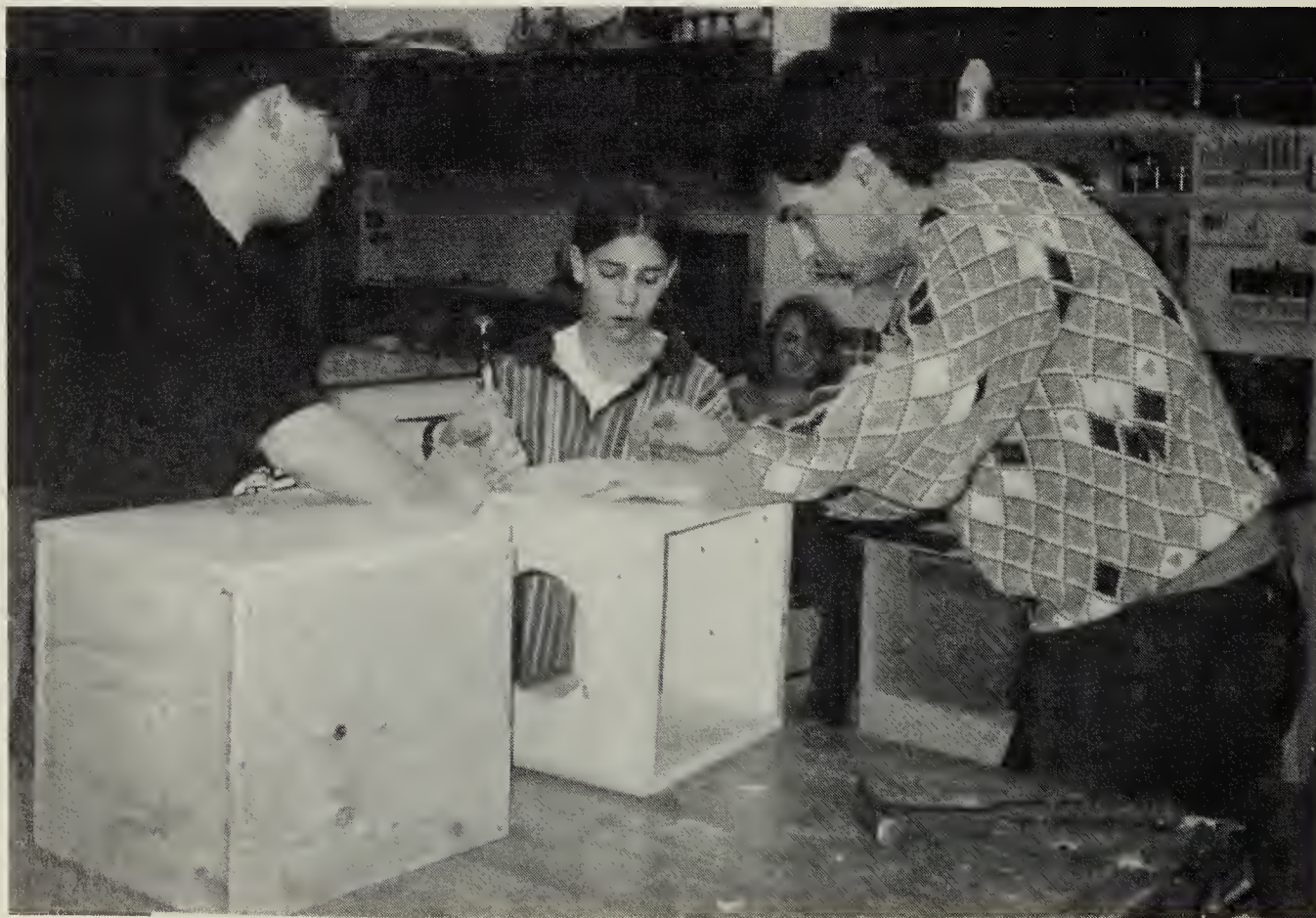




nest boxes during their weekly Industrial Arts class over the course of a three-month period.

Bob Baragar and myself were the teachers involved with the direct supervision of the project. As well as developing basic woodworking skills,

this project has allowed the students to develop attitudes and knowledge about endangered species and their need for protection. It has also shown the students “they can make a difference today” in the protection of species for tomorrow’s generation to enjoy. Bob Baragar confirmed that





the students gained practical wood-working skills as well as gaining environmental awareness. The construction of nest boxes enabled the students to follow a step by step plan to reach the goal while developing the practical skills involved with carpentry.



At the completion of the project Tara Gonty, age 15, declared that she really enjoyed working on this project. Justin MacLeod, age 15, felt that he had gained skills in working with wood as well as learning a lot about the Burrowing Owl. Marsh Thompson, age 13, suggested that



“this project was so good because it was useful — we were helping a species survive.”

The final stage in this project was the installation of the nest boxes in the rural area surrounding Weyburn. On 8 June all of the partners came together to bury the boxes. Heather Dundas and two Regina volunteers, Darin Thibodeau and Dan Vetter, travelled by van to Weyburn, picked up the students and headed to the first of three selected sites. At the end of the day, nine boxes had been successfully buried on the farmland owned by farmers who were members of Operation Burrowing Owl. The remaining six boxes will be sent to designated sites throughout southern Saskatchewan.

At the end of the day Greg Johnston, age 15, and Mike Nieszner, age 14, both said that they had fun — “digging holes was hard work but

it was fun.” Joey Gonty and Mark Preston, both 14, stated that “it was great to be outdoors for the day but the mosquitoes really enjoyed having us out in the fields.” Adam Sandeski, age 14, summed up the entire experience, from the initial discussion to burying the boxes — “It’s really nice to know that when people work together good things can happen.”

The students are proud to have been able to assist the Burrowing Owl. They also realize that it required a joint effort for this project to be realized. Without the cooperation and funding from Nature Saskatchewan, this venture would have remained in the discussion stage. We can make a difference when we work together.

Editor’s Note: All photos demonstrating the building and installation of Burrowing Owl boxes taken by Gaye Morris.

Nest Box Construction for Burrowing Owls

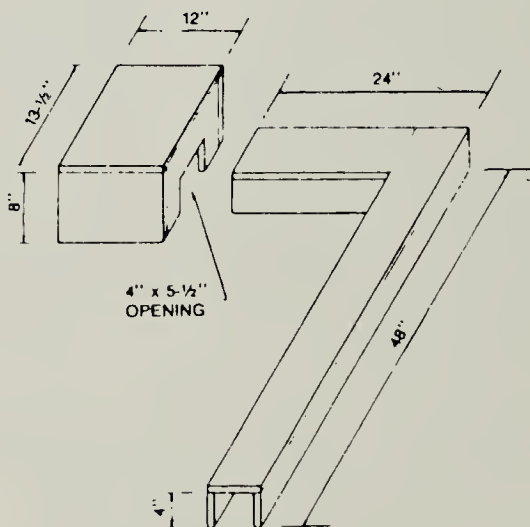
You need the following pieces of 3/4" plywood:

Nest box:

- Top - 12" x 13 1/2" (1)
- Walls - 8" x 12" (4)
 - one with 4" x 5 1/2" opening

Tunnel:

- Tops - 6" x 48" (1)
 - 6" x 17 7/8" (1)
- Walls - 4" x 48" (1)
 - 4" x 42" (1)
 - 4" x 23 1/4" (1)
 - 4" x 18 3/4" (1)



Nail the pieces together as shown and place the nest box in a pasture away from trees. It should be buried at least 6" below the ground with the tunnel gradually sloping up to the surface. Leave a dirt mound near the opening; owls like to sit on it. Boxes are especially effective in increasing the number of owls nesting in an existing colony but each pair likes some space so place boxes 50 metres or more apart. (Source: "Operation Burrowing Owl," SNHS brochure.)

WETLAND LOSS IN ASPEN PARKLAND OF SASKATCHEWAN

JORDAN IGNATIUK and DAVID C. DUNCAN, Saskatchewan Wetland Conservation Corporation, Room 110, 2151 Scarth St., Regina, SK. S4P 3Z3

Wetlands are some of the most productive ecosystems, providing a multitude of benefits including ground water recharge, soil and water conservation, flood prevention and wildlife habitat. Most of these benefits accrue to society at large. Wetlands can also be obstacles to farming and development, and may represent lost economic opportunity. Most of these costs are borne by the landowner. Wetlands in Saskatchewan have been and continue to be destroyed. Although some land use changes on wetlands have been documented and reviewed across Canada,⁷ estimates of actual loss of wetlands has not been intensively studied in Saskatchewan. This study attempts to estimate the percentage of wetlands permanently lost in Saskatchewan from the late 1940s to the present, and compares these results to other studies.

Methods Quarter sections were randomly selected from five regions of the province which fall within key program areas for the North American Waterfowl Management Plan (NAWMP)¹⁶ in Saskatchewan (Table 1). Historical air photos were obtained from Central Survey and Mapping Agency at a scale of 1:15,000. The oldest available photos were used, the majority of which (75-80%) were from 1947 and 1949. Recent aerial photographs (1986-1992) at a scale of 1:20,000 were obtained from Ducks Unlimited Canada for com-

parison. Photos were enlarged 200% on a laser photocopier, which preserved the clarity and definition of the original photo, to enhance detection of wetlands.

Wetlands were delineated as any depression or basin which was covered by water, at least periodically. Numbers of wetlands were counted independently on both the old and new photos and compared side by side to assist in discriminating wetlands and determining loss. Loss was defined as total obliteration (ie. drained and filled). Total number of wetlands and average per quarter section were determined for each region. Percentage loss of wetlands is reported for each region and overall. A comparison with ground-truthed transects conducted under the Prairie Pothole Project in the Redvers area was made to calibrate the accuracy of this study in identifying wetlands from photos.

Results A total of 2,469 wetlands were counted on the old photos for an average of 29.4/quarter section. On the recent photography 2,314 wetlands were counted for an average of 27.5/quarter section. This represents an average 6% loss of wetlands in all regions. The region with the highest loss was the Thickwood Hills (29%), while at Redvers there was a 6% increase; the other three regions experienced losses of 7-16% (Table 1).

Table 1. COMPARISON OF NUMBER OF WETLANDS ON OLD AND NEW AIR PHOTOS IN SASKATCHEWAN

Region	No. of Quarter Sections Examined	Number of Wetlands		Percent Loss/Gain
		Old Photos	New Photos	
Redvers	20	807	854	+6
Wadena	23	605	561	-7
Saskatoon	18	530	493	-7
Thickwood	12	286	203	-29
Melfort	11	241	203	-16
TOTAL	84	2,469	2,314	-6

The recently ground-truthed transects at Redvers revealed a total of 223 wetlands, compared to 205 identified from the photos; a 92% level of accuracy in discriminating wetlands via air photo interpretation. Most of the wetlands which were missed on the air photos were small temporary basins and roadside wetlands.

We recognize that factors such as differences in wetland conditions between the time when the old and new photographs were taken as well as time of year when the photos were taken can affect results of such a study. In addition, our ability to detect small temporary ponds from aerial photographs could also lead to errors in estimating wetland numbers. However, the comparison with ground-truthed transects from the Redvers area indicates that the number of these wetlands which were missed by interpreting air photos is not high, particularly considering that the Redvers area has a very high density of small wetlands.¹ Overriding these factors however is how wetland loss is defined. Defining cultivation of a wetland as loss would result in much higher estimates of wetland loss than did our examination of air photos for "permanent" loss. We believe that this study provides reasonably accurate information on rates of complete, long-term wetland loss caused by drainage or filling.

Discussion Our results show that

permanent wetland loss since the 1940s in Saskatchewan averages 6% with substantial variation among regions. The variation in loss rates among regions, from +6% at Redvers to -29% in the Thickwood Hills (Table 1), demonstrates how results can be affected by factors such as annual variation in wetland conditions (e.g. the wet spring in Redvers in 1986 when the photos were taken) or a high rate of land alteration such as the extensive bush clearing, drainage and filling which was evident in the Thickwood Hills area. The northernmost two areas exhibit the highest loss rates in this study (Thickwood and Melfort). This may be a result of relatively recent change (i.e. post-1940s) compared to more southerly areas (i.e. pre-1940s).

An estimate of 40% wetland loss on the Canadian prairies is often cited,⁹ considerably higher than that revealed by this study and several others (Table 2). Only two of the studies we reviewed reported a loss rate of 40% or higher. It is noteworthy that both of those studies looked at the area of wetlands lost, not the number of wetlands lost. In the aspen parkland of Alberta, drainage on a relatively small 109-ha area from the turn of the century was estimated at 61% of the original wetland area with 81% of this having been drained by 1950.¹³ In the Minnedosa pothole region of southwestern Manitoba, a

Table 2. COMPARATIVE STUDIES OF LAND USE CHANGE AND WETLAND LOSS IN THE PRAIRIE PROVINCES				
Study Area	Period	Wetland Lost		Comments
		Area (%)	Number (%)	
Alberta Aspen Parkland	1900-1970 ¹³	61	—	survey plans, drainage maps, air photos and field and air surveys, 109 ha area, 81% drained by 1950, wetlands less than 0.8 ha not included
Minnedosa Pothole Region, Manitoba	1928-1964 ⁶	27	—	12 roadside transects, air photos and field survey, 3 land use classes
	1964-1974 ¹⁰	41	—	updates of Kiel <i>et al.</i> ⁶
	1974-1982 ¹¹	33	—	
	1928-1982	70	—	overall loss ^{6,10,11}
Black Soil Zone of the Prairie Provinces	1940-1970 ³	13	4.5	600 quarter sections, air photos and field reconnaissance, individual pond records
Minnedosa Pothole Region, Manitoba	1948-1970 ¹²	-4	—	air photos and field investigations, 5 cover classes, 23 km ²
Newdale Plain, Manitoba	1964-1974 ²	area and perimeter increased	7	20 sample plots at 65 ha each, air photos, 7 cover classes, wetland loss offset by gain in temporary ponds
NAWMP Key Program Areas in Saskatchewan (this study)	1947-1992	—	6	84 quarter sections, air photos

41% loss of wetland area was reported between 1964 and 1974 based on the roadside transects of Kiel *et al.*^{6,10} An update on that same area revealed a 70% loss of wetland area from 1928-1982.¹¹ Roadside transects may be biased towards high wetland loss because such wetlands may be destroyed by road-building activity and drainage may be aided by the proximity of roadside ditches.⁹

Within smaller areas of the Minnedosa pothole region, where high losses of wetland area have been reported, the findings of other studies show conflicting results to those studies which were based on roadside surveys. In a study of nine sections south of the town of Minnedosa, water area increased from 4% to 8% between 1948 and 1970.¹² Another study of the same area found no appreciable change in wetland numbers between 1964-1974 but did detect an increase in both wetland

area and perimeter.² A study of the black soil zone of the prairie provinces (which included our study area) found a 13% loss of wetland area and a 4.5% loss of wetland numbers between 1940 and 1970.³ Thus it appears that studies of loss of wetland area show much more variability and often higher loss rates than do studies which look at loss of wetland numbers.

Comparisons of wetland loss among different studies may be complicated by site-specific differences (ie. an area could have a topography which is particularly conducive to drainage or may have experienced a high drainage rate for other reasons) as well as varying methods of estimating and defining loss. Other potential sources of variation are differences in annual conditions (ie. wet versus dry years) and time of year that wetland comparisons are made (ie. wetland numbers and area typically decrease from spring to fall).



Strawberry Lakes

Lorne Scott

The permanent loss of wetland basins or depressions in Saskatchewan parkland resulting from drainage or complete filling between the 1940s and early 1990s would appear to be in the order of 10% although it may be considerably higher in more northerly regions. Turner *et al.*¹⁵ reported a 0.19% annual rate of drainage in Saskatchewan which translates to a 7% loss rate over a 40-year span, similar to our study. Goodman and Pryor's³ 4.5% loss over 30 years is also similar in magnitude. However, more transitory impacts on wetland basins, such as cultivation of primarily ephemeral ponds, have functionally destroyed 35-50% of Saskatchewan wetlands.^{1,15} Eliminating wetland vegetation through cultivation results in decreased snow catchment, increased soil and water erosion, and destruction of the plant life and aquatic invertebrates which form the basis of the wetland ecosystem.^{5,8,14}

A high degree impact on wetland margins was evident over the 40-year span examined in this study. The clearing of bush and the cultiva-

tion of dry temporary wetlands were two obvious major changes. Rapid degradation of wetland basins and margins continues. Such activity eliminates native vegetation and hence wildlife habitat. The hardest hit are shallow temporary ponds which are easily cultivated but are preferred habitat for many species of ducks.⁴

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Maximum butterfly longevity: Cabbage Butterfly: 3 days for female/17 for male; Tiger Swallowtail, 3/12; Spring Azure, 4/2; Orange Sulphur, 14/25; Viceroy, -/17; Great Spangled Fritillary, -/22. *Paul Opler and George Krizek, Butterflies East of the Great Plains.*

FRANK LAKE — IT'S MORE THAN DUCKS

TOM SADLER, 201E Pine Road, Strathmore, AB. T1P 1C1, CLIFF WALLIS, 615 Deercroft Way SE, Calgary, AB. T2J 5V4 and CLEVE WERSHLER, 70 Deerpath Rd. SE, Calgary, AB. T2J 6K8

Wetlands are among the most productive ecosystems on the planet, and are the most biologically diverse of the temperate zone ecosystems. Canadian wetlands support over 300 species of birds and 70 species of mammals as well as several species of reptiles. Wetlands are also essential for the survival of all our amphibians and contain a myriad of invertebrates, micro-organisms and native plant life. Because of the importance of wetlands and the myriad of threats facing them, Ducks Unlimited Canada's (DU) projects have focused on wetland development and protection. Many DU projects also incorporate areas of productive upland habitat. In addition to their importance for waterfowl production, both wetland and upland sites are very important for conserving a broader range of biodiversity.

In 1994 DU established a "More Than Ducks" national committee and directed it to incorporate native plant materials into Prairie Care projects and optimize the benefits for a multitude of plants and animals that occur in DU and North American Waterfowl Management Plan wetland and upland developments.

Located near High River in southwestern Alberta, the Frank Lake basin is a provincially significant wetland.⁸ When it has had water, it has been the most important wetland in southwestern Alberta for nesting and staging waterfowl, marsh birds, and shorebirds. The basin and surround-

ing landscape have been extensively modified for decades by human activities. The Frank Lake area is a DU/Alberta Prairie Care project site that has recently been restored and that has been selected for the implementation of several projects under the More Than Ducks program.

History of Frank Lake

Frank Lake has had a history of widely fluctuating water levels that have severely diminished its productivity. In recent decades, the lake has varied in size from over 3,800 acres in the 1950s to being completely dry in the 1930s, mid-1940s, and from 1983 to 1989. DU first looked at the possibility of diverting water to Frank Lake from the Highwood River in 1946 but the scale of such a project was beyond its scope at the time.

In 1952, the Frank Lake basin experienced flooding during a record runoff. The local municipal district and the Alberta Government began a drainage program that would have drained the entire lake. However, DU stepped in and only the south basin was partially drained. Flooding occurred again in 1975 and a sheet steel weir was constructed to stabilize the remaining marsh. A water license was issued to Ducks Unlimited. After 1975, water levels in the remaining lake receded owing to a lack of runoff and, in 1983, Frank Lake went dry.

In 1988, DU took advantage of an



Yellow lavauxia (Oenothera flava)

C. Wallis

opportunity to secure a water supply for the lake. Cargill Ltd. proposed to build a large meat packing plant near High River. The firm's plan to construct a pipeline northeast to the Bow River to facilitate disposal of the plant's tertiary treated waste water met with strong opposition. In May of 1988 DU was approached by Alberta Environment to use Frank Lake for the disposal of Cargill's waste water. DU agreed to this provided they could get additional water to restore the marsh and make the Frank Lake complex a viable wetland. Alberta Environment agreed to DU's proposal and additional water supplies for Frank Lake were secured from the Town of High River's tertiary effluent and from natural flows in the Highwood River. Diversion schedules were designed to eliminate conflicts with the Highwood fisheries.

In 1989, a pipeline was constructed to Frank Lake and DU undertook the construction of additional diking as well as water controls to regulate the marsh. Flood-prone lands and adjacent uplands were

purchased. This allows for the back-flooding of portions of the original marsh that had been drained and provides for the restoration of upland areas to native grassland species to produce cover for wildlife. Seven hundred acres of back-flood wetlands have been added to the roughly 2,500 acres of the main Frank Lake basin. Almost 2,000 acres of upland cover are being restored.

In 1994 DU funded a habitat mapping program as well as spring, summer and fall surveys of wildlife including vascular plants, amphibians, reptiles, birds and mammals. A Breeding Bird Survey route and several breeding bird transects were established to provide a basis for future monitoring, particularly in upland habitats. Field studies are continuing in 1995.

Description of the Frank Lake Basin

The major habitat types of the Frank Lake Study Area have been



White-faced Ibis

C. Wallis

broadly classed into four categories: upland native mixed grasslands; meadows and shorelines; wetlands; and human-modified habitats. Grasslands occur only as small remnants on the surrounding uplands. Lower-lying meadows and shorelines occur around temporary wetlands and the permanent water of the larger basins. The wetlands include expanses of open water and extensive bulrush marsh and unvegetated shores. Human-modified habitats include cropland, planted cover and previously cultivated wetlands. To date, 177 vascular plant species (147 of which are native), two amphibian species, 168 bird species, and 13 species of mammals have been recorded in the Frank Lake project area. The most environmentally significant habitats have been identified and mapped. These include: all remnant patches of upland native mixed grassland; a productive shoreline complex on the largest peninsula in the largest lake basin; an extensive bulrush marsh in the largest lake basin; and diverse wetland vegetation, shorelines and

shallow open water in the bays and along the shores of the larger basins.

Associated with these significant habitats are regionally significant concentrations of migrant shorebirds, nesting and migrating waterfowl, and rare or endangered species. The diversity of shorebirds is great. Shorebird species include species that are rare in Alberta such as Sharp-tailed Sandpiper, Western Sandpiper, Red Phalarope and Dunlin. Black-necked Stilts have nested in recent years. Frank Lake provides an important staging area in spring and fall for Trumpeter Swans — as many as 70 have been noted during migration. Up to 20 White-faced Ibis have been observed and the species may nest. Some rare plant species have also been recorded.

The most significant plant and animal species are:

- 9 prairie bird species considered to be of high priority for the North American Waterfowl Management

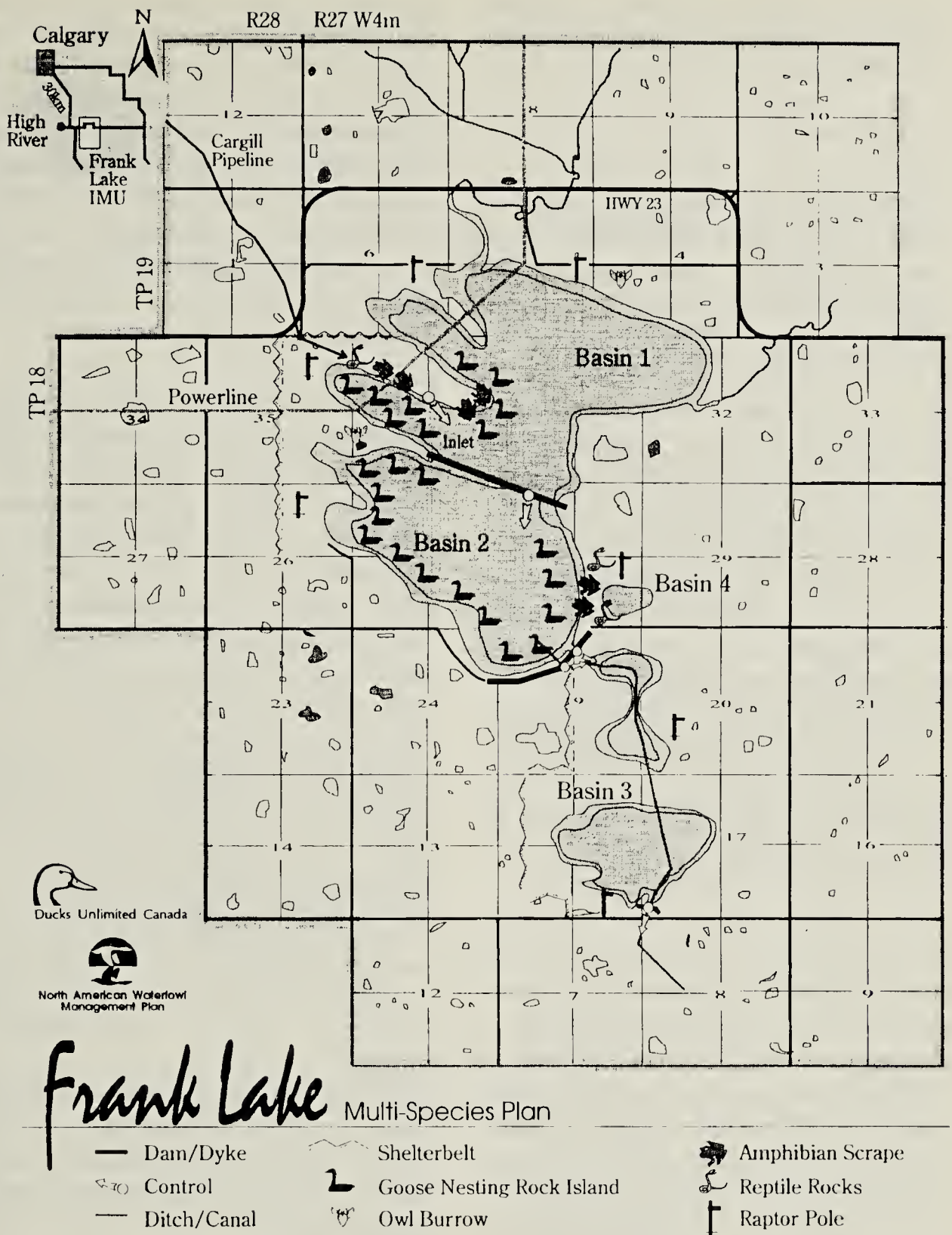


Figure 1. Frank Lake basin, southwestern Alberta.

Plan; 4 vulnerable, 5 threatened and 1 endangered species as defined by COSEWIC; and 8 species (5 Red-listed and 3 Blue-listed) of concern in Alberta (Piping Plover, Baird's Sparrow, Trumpeter Swan, Burrowing Owl, Peregrine Falcon, Upland Sandpiper, Loggerhead Shrike, Ferruginous Hawk, Short-eared Owl, Long-billed Curlew, American White Pelican, Bald Eagle, Prairie Falcon).^{1,2,5} Of

these, Piping Plover, Loggerhead Shrike and Burrowing Owl have not been sighted in recent years.

- 19 regionally or provincially rare bird species.^{6,7}
- 1 provincially and 3 nationally rare plants, including a COSEWIC threatened species (western blue flag (*Iris missouriensis*), yellow lavauxia (*Oenothera flava*), blunt-fruited

yellow cress (*Rorippa truncata*) and slender yellow cress (*Rorippa tenerrima*).^{2,3,4}

Management

Although regional populations of many native plants and animals have been significantly reduced or eliminated, DU's Frank Lake project provides high quality habitat for a variety of native wildlife. It also offers an opportunity to restore several degraded habitats. In the past, many wildlife enhancement projects have focused on one or a few species or species' groups. The challenge at Frank Lake is to institute an ecologically based management plan that will maintain the range of natural habitat variability. Management must not only provide habitat for the target waterfowl species of traditional wetland projects but also for the full range of biodiversity that has historically and recently occurred at the site.

Grazing, fire, and natural water level fluctuations were historical factors in grassland and wetland ecology in the Northern Great Plains including the area at Frank Lake. A variety of techniques, including reclamation of cultivated lands, grazing, burning, and water level management, have been implemented or are being considered for maintaining and restoring productive habitats at Frank Lake. The results of inventory and monitoring programs will be factored into future management and development decisions.

The main intent of the management plan for Frank Lake is to reestablish the marsh on a permanent basis. The maintenance of healthy marsh conditions is essential, not only to waterfowl but for a wide variety of marsh species. This includes a colony of several thousand nesting

Franklin's Gulls that has reestablished itself there. Protection of temporary wetlands and gradual draw-downs of some basins will be used to maintain the full range of marsh vegetation, rare plants and feeding habitats for water birds, marsh birds, and shorebirds. Portions of the wetlands will be shallowly back-flooded to provide habitat for waterfowl and migrant shorebirds.

Grasslands will be managed and restored to provide suitable conditions for native grassland plants, birds and mammals. Waterfowl production will be maximized through maintenance of lush upland nest cover, particularly in important nesting areas adjacent to wetlands. This dense cover will also support species like Baird's Sparrow. Conversely, cover removal through grazing or fire is essential for upland species like the Richardson's Ground Squirrel and Chestnut-collared Longspur. In grassland ecosystems, the Richardson's Ground Squirrel is a keystone species that directly or indirectly is important to the survival of many prairie species.⁸ This includes several predators like American Badger and Ferruginous Hawk that are now rare in the region. Currently, grazing is being used on a limited basis to test its effectiveness in creating habitat diversity in tall dense planted cover.

Late summer and fall burning would most closely mimic the natural fire regime. However, spring burning may have a role to play in controlling some non-native species, for example, Kentucky bluegrass (*Poa pratensis*).⁸ There is no controlled burning being undertaken at the present time.

Artificial structures have been constructed for a limited number of species. Examples include shallow scrapes for breeding amphibians; nest

boxes for Burrowing Owls and Mountain Bluebirds; nest platforms for Canada Geese and hawks; rock piles for garter snakes; and rock islands for nesting waterfowl and shorebirds. Plantings of native shrubs will increase the use of the area by migrant songbirds and may attract nesting Loggerhead Shrikes.

The effects of bird-watchers, hunters, researchers and management activities during critical biological events are being accounted for in development and management plans. Measures that have been taken or are being considered to reduce these impacts include setting up viewing blinds, limiting access and developing the area to redirect visitors away from sensitive areas. One of the simplest management prescriptions is to avoid extensive placement of trails through productive shoreline habitats. The location of trails will be varied so that they are not running the length of productive or rare linear habitat or along an interface between two habitats.

Conclusion

Nowhere in southwestern Alberta is there a better opportunity for the More than Ducks program to add value to wetland and upland conservation programs than at Frank Lake. It is benefiting many wildlife species and habitats and helping to restore some of the biodiversity that has been lost owing to impacts from human activities over the last century. Carefully planned and controlled ac-

cess and viewing sites will provide public enjoyment and education while maintaining the productivity of this important wildlife area.

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CONFIRMED WINTER RESIDENCY
OF COMMON GOLDENEYE AND
COMMON MERGANSER IN THE
NORTHWEST TERRITORIES.

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On 12 December 1990 one male Common Goldeneye was at Jackfish Lake in Yellowknife (62°28'N, 114°22'W; Fig. 1), Northwest Territories (NWT), where effluents from a diesel power plant maintain two patches (ca. 100 m²) of open water throughout the winter. The bird remained on this lake, which I visited every two to three days, until 23 February 1991.

Thus it spent more than two winter months at Yellowknife.

I went to the Tartan Rapids of the Yellowknife River, 15 km northeast of Jackfish Lake, on 3 March 1991 to look for the goldeneye. This ice-free area includes the rapids (ca. 30 x 100 m), and a large pool below the rapids that is often more than 300 m

Table 1. SOME RECENT WINTER SIGHTINGS OF WATERBIRDS IN ICE-FREE, INLAND FRESHWATER, N.W.T.

Source	Species and Number	Location (Figure 1), Date and Comment
R. Bromley (pers. comm.)	Common Merganser, 1 at least.	Yellowknife River, below "Con Hydro" (62° 42'N 114° 20'W), where open water occurs year-round, one winter month in the 1960s.
W. Carpenter (pers. obs.)	Unident. diving ducks, a few.	Cameron River (62° 50'N, 114° 10'W), February 1972.
Scotter et al. (1985)	American Dipper, 2.	Wild Mint Springs (ca. 61° 30'N, 126° 30' N), Nahanni National Park Reserve, 25 February 1977. Suspected to be year-round residents.
	Mallard, 2.	Same location, date and comment.
K. Poole (pers. obs.)	Common Merganser, 1.	Yellowknife River, below Tartan Rapids (62° 41'N, 114° 15'W), ca. 10 March 1984 or 1985.
J. Sirois (pers. obs.)	Mallard, 1.	Yellowknife River, Tartan Rapids, 26 January 1987.
Sirois (1991)	Black Guillemot, 1.	Cameron River (62° 27'N, 114° 22'W), 26 November 1988.
	Red-necked Grebe, 1.	Offshore, Great Slave Lake (61° 55'N, 114° 20'W) where water had not frozen yet, 15 December 1988.
G. Stenhouse (pers. obs.)	Mallard, 20.	Walker Creek Lake (65° 20'N, 128° 30'W), January 1988, where springs keep water open year-round.
D. Dubé (pers. obs.)	Unident. ducks, 6.	Camsel River (65° 35'N, 117°45'N), 17 January 1989.
J.Sirois (pers.obs.)	Lesser Scaup, 1.	Jackfish Lake in Yellowknife, 12-16 December 1990.



Figure 1. Southwestern Northwest Territories: rivers and other sites with ice-free water throughout the winter (Source: F.M. Conly, Environment Canada, Yellowknife).

long. One male Common Merganser was there.

I returned to the Tartan Rapids eight times through 18 April. During each visit, the merganser was either loafing, sleeping, diving, or preening its feathers. On a subsequent visit, on 20 April, three more Common Mergansers, presumably newly arrived spring migrants, were there.

Thus a Common Merganser spent at least seven late-winter weeks at the Tartan Rapids during March and April 1991.

To my knowledge, these are the first confirmed records of winter residency for these species in the NWT. However, these are not the first winter sightings of waterbirds in NWT freshwaters (Table 1). Other ducks,



Tartan Rapids of the Yellowknife River, March 1991

Jacques Sirois

as well as some gulls and auks, are known or suspected to winter in polynyas and other ice-free marine waters.^{1,4,9}

As far as I know, no duck has been reported during the winter in NWT lakes or rivers since April 1991 but it is possible that some have wintered there again as ice-free habitat is available at several sites. Open water occurs in more than 30 rivers or lakes during the winter (Fig. 1) and often at numerous sites along the same river.

I suspect that waterbirds winter regularly in NWT, particularly in the Mackenzie Mountains (Fig. 1), where fast-moving rivers and springs provide reliable ice-free water year-round. This is suggested by the numerous winter records of ducks in the Yukon (P. Sinclair, unpubl. data) where habitat is similar to that of the Mackenzie Mountains and Common Merganser and Common Goldeneye are confirmed winter residents.¹³

Confirmation of wintering by Common Goldeneye and Common Merganser in southwestern NWT is not surprising in light of the numerous winter sightings and confirmed and suspected winter residency records of these two species in Saskatchewan and Alberta.^{6,7,8,10,15} I suspect that waterbirds will winter more frequently in NWT freshwaters in the future. Climate-warming trends in western NWT have shown the greatest overall increase (1.7°C) in Canada in the last century.⁵ This should lengthen the ice-free season, as documented elsewhere, and result in larger amounts of ice-free water where it already occurs.¹¹

1990 was the warmest year on record worldwide, and southern Canada and most of the U.S. were among the areas where this was most pronounced.² Whether this favoured the winter residency of these two ducks at Yellowknife is unclear. Locally, the 1990-1991 winter was not unusually warm: November and

December 1990 were colder than normal (mean daily T°C: -20.6 and -29.1, respectively); January, February and April 1991 were slightly warmer (-26.9, -23.8, and -4.8, respectively); and temperatures were normal in March 1991 (Environment Canada, unpub. data).

Acknowledgements I thank A. Downey for drafting the map, G. Meunier for taking the picture of the Tartan Rapids, and the Canadian Wildlife Service for its logistical support.

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Some of the harshest deserts of the world are home to unique ensembles of insects, lizards and flowering plants. In the Namib of southwestern Africa, beetles use leg tips expanded into oarlike sand-shoes to swim down through the shifting dunes in search of dried vegetable matter. Others, the swiftest runners of the insect world, race over the baking hot surface on bizarre stilt legs. *E.O. Wilson, The diversity of life. W.W. Norton and Company, New York.*

OBSERVATIONS OF HYBRID SAGE X SHARP-TAILED GROUSE IN SASKATCHEWAN

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Sage Grouse have rarely been reported to hybridize with other grouse. Two Sage X Sharp-tailed Grouse hybrids were reported from Montana,¹ the first description of hybridization between these species, and a Sage Grouse X Sharp-tailed Grouse hybrid was observed displaying on a Sage Grouse lek in North Dakota.⁴ A case of hybridization between Sage Grouse and Blue Grouse has also been described.⁵

In 1988 I observed hybrid Sage Grouse near Meyronne and south of Glentworth. I reported these observations as the first for Saskatchewan.

Meyronne Surveys conducted by the Wildlife Branch of what is now the Department of Environment and Resource Management have documented the decline of a small Sage Grouse population in Meyronne Community Pasture, just south of the village of Meyronne. Sage Grouse historically used 2 leks here on NW/3 and NE/4 of TWP 8-7W3.

Data on file summarizing the Meyronne Sharp-tailed Grouse spring survey record populations of two male Sage Grouse in 1975 (memo T. Weins to S. Barber, Wildlife Branch, 5 May 1977), nine males 2 May 1976 (D. Hjertaas), eight males 16&29 April 1977 (T. Weins), five males and one female 26 April 1979 (R. Longmuir), four males 24 April 1980 (S. Barber), and four males 22 April 1981 (M. Hlady). The 1981 observa-

tion was interesting because two of the Sage Grouse were displaying on a Sharp-tailed Grouse lek while the other two were about 300 metres from this lek which was approximately 600 metres from the former Sage Grouse lek. M. Hlady observed two male Sage Grouse displaying at this Sharp-tailed Grouse lek on 7 May 1982 and one displaying male Sage Grouse with 18 Sharp-tailed Grouse 3 May 1983. Surveys by R. Melinchuk (1984), K. Callette (1985), T. Weins and F. Beek (1986), and D. Hjertaas (1987) failed to locate any Sage Grouse.

On 2 May 1988 I observed what was apparently the last "half" of a Sage Grouse at Meyronne, a hybrid male displaying at a Sharp-tailed Grouse lek. When I first observed this lek, at 5:50 a.m., 24 male Sharp-tailed Grouse were dancing vigorously. One female Sharp-tailed Grouse was also present as well as the hybrid. The hybrid showed many aspects of typical Sharp-tail lek behaviour. It paired off with a male Sharp-tail, stamped its feet, spread its tail in a fan and hooted. Its posture was similar to that of the displaying Sharp-tailed Grouse. I noted that the hoots had a much deeper tone than the Sharp-tailed Grouse.

The hybrid was significantly larger than a Sharp-tailed Grouse. Its bill had a slight but more noticeable curve than the Sharp-tailed Grouse and the bill tip was black. The base



Sage X Sharp-tailed Grouse Hybrid

Dale Hjertaas

of the throat was black while the belly was light-coloured with a hint of the black belly of a Sage Grouse on the lower belly. Back coloration was similar to a Sharp-tailed Grouse and wings showed the white flecks of a Sharp-tailed Grouse. The chest had a big dark ruff containing air sacs. This ruff is analogous to the yellowish ruff of a Sage Grouse, but with longer brown feathers. When it erected this ruff the feathers along the neck stood up, giving the impression of two little horns. At a distance these made one think of the pinnae of the Greater Prairie Chicken but on closer inspection it is clear that these were erected neck feathers, there was no sign of separate long pinnae. The tail feathers, which he spread in a fan while displaying, were dark with a white tip when viewed from the front and appeared white and black when viewed from the rear. He had a yellow stripe over his eye. In addition he had two white lines on the head. One started just behind the eye, ran toward the back of the head and then curved down the neck. The

other started at the base of the bill and ran parallel to the first.

I revisited the lek later in May with J. Brochu, and obtained a series of photos. I searched this and neighbouring leks the following year but found no sign of the hybrid.

This hybrid clearly shows marks of a Sage Grouse in its large air sacs and covering ruff, and in the tail. It shares these characters with the Sage Grouse/Sharp-tailed Grouse hybrid from North Dakota.⁴ It shows its Sharp-tailed Grouse ancestry in the white flecks in the wing, and whitish breast, with brown V patterns along the edge.

The decline of the Meyronne Sage Grouse population from the recorded high of nine males in 1976 to 0.5 males in 1988 and then extinction may be due to habitat modification. When I first observed the population in 1976 I was surprised as the stands of Sage Brush in this pasture seemed marginal for Sage Grouse.

T. Weins (memo to S. Barber, Wildlife Branch, 5 May 1977) noted that approximately 85% of the pasture had been broken and seeded to crested wheat grass. An unsigned note in the survey file indicates this conversion to crested wheat grass was apparently completed in the first part of the 1970s. Thus the quantity of sage brush on which the Sage Grouse depend may have originally been more extensive. Its disappearance could have caused the population decline. The area where the Sage Grouse were observed was one of the more extensive areas of native vegetation remaining in the pasture.

Glentworth In 1987 Harris, Weidl & McAdam² reported a single male hybrid grouse on a Sage Grouse lek with 40 male Sage Grouse on 9 Twp 1-6W3 along Weatherald Creek. When observed on 17 April the hybrid was actively dancing near the centre of the lek and was continually chasing any male Sage Grouse which infringed upon its territory. The observers reported this as a Sage Grouse X Greater Prairie Chicken hybrid. This hybrid was still present with 27 male Sage Grouse when the lek was visited on 7 May 1987.

On 6 April 1988 C. Palmer and I observed two hybrid grouse with 33 male and 15 female Sage Grouse at this lek. Both of the hybrids were displaying and so presumed to be males. Although they were too far away to photograph, we did observe them through a spotting scope and recorded the following observations.

The birds had fan tails which appeared brown with black edgings and black tips. From the underside white spots showed on the tail fan. The tail feathers did not have the pronounced points of a Sage Grouse. The birds displayed with the

head tilted forward and the tail up and spread, much as a Sharp-tailed Grouse would. However we did not record them actually strutting like Sharp-tailed Grouse. Wings and back were grayish brown. The breasts were white. A distinctive feature was a dark ruff of feathers across the chest which appeared to erect during display. This dark patch came half way down the chest.

When I observed the hybrid at Meyronne I was struck by the strong similarity of the three hybrids. Using this description and the photos included in Harris, Weidl & McAdam² I noted all three hybrids showed the dark ruff covering large air sacs, whitish breast and similar black fan tails tipped with white. From the back side, the tail of the hybrid photographed by Harris, Weidl & McAdam² showed more white than the Meyronne bird, but was otherwise similar.

There are three good field marks which easily separate Greater Prairie Chicken from Sharp-tailed Grouse in the field: These are the pinnae, short rounded dark tail, and heavily barred breast of the Greater Prairie Chicken compared to no pinnae, white pointed tail and white breast with V markings on the Sharp-tailed Grouse. Close examination of the photographs showed no pinnae, although the erected ruff feathers gave the impression of pinnae, whitish breast and a dark tail. The first two suggest Sharp-tailed Grouse ancestry, the latter could indicate Greater Prairie Chicken ancestry, but could also come from the Sage Grouse. The white breast seems especially strong evidence of Sharp-tailed Grouse ancestry as of the three species, only the Sharp-tailed Grouse has a white breast. The North Dakota hybrid grouse, identified as Sharp-tailed/Sage Grouse also had a whitish

breast, dark ruff and dark fan tail. I therefore concluded that all three Saskatchewan hybrids were Sharp-tailed Grouse X Sage Grouse hybrids.

W. Harris observed a fourth hybrid grouse at a lek along Rock Creek on NW/12 TWP 1-6W3 in 1988. I also visited that lek 7 April 1988 and observed 46 male and 43 female Sage Grouse but I did not see the hybrid. W. Harris (pers. comm) indicated it was similar to the other hybrids. These two leks are less than four miles apart, so it is possible one hybrid had moved between the two leks.

In 1989 Wayne Harris observed one hybrid grouse at the Rock Creek lek, none were observed along Weatherald Creek or at Meyronne. I am not aware of any observations of these hybrids since 1989.

Was there a common factor causing this hybridization? First it is possible the two or three hybrids south of Glentworth were siblings, so there may be only 2 cases of hybridization. The Meyronne hybridization could be a result of the declining population, leaving a last Sage Grouse with no conspecific partners and therefore

electing to mate with another species. However 93 male Sage Grouse and 44 male Sharp-tailed Grouse were counted in 1988 on TWP 1-6W3, the township where the hybrids were observed.³ There should therefore have been suitable conspecific mates for both species. The occurrence of hybridization here at the same time as at Meyronne was probably just coincidence.

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The forest at night is an experience in sensory deprivation most of the time, black and silent as the midnight zone of a cave. Life is out there in unexpected abundance. The jungle teems, but in a manner mostly beyond the reach of the human senses. Ninety-nine percent of the animals find their way by chemical trails laid over the surface, puffs of odor released into the air or water, and scents diffused out of little hidden glands and into the air downwind. Animals are masters of this chemical channel, where we are idiots. But we are geniuses of the audiovisual channel, equalled in this modality only by a few odd groups (whales, monkeys, birds). So we wait for dawn, while they wait for the fall of darkness; and because sight and sound are the evolutionary prerequisites of intelligence, we alone have come to reflect on such matters as Amazon nights and sensory modalities. *E.O. Wilson. 1992. The diversity of life. W.W. Norton and Company, New York.*

RARE AND MARGINAL WINTER PASSERINE BIRDS IN MANITOBA

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Introduction Artificial feeding has dramatically altered the winter distribution of some North American birds. For example, Kaufmann has suggested that a "beneficent Maginot Line" of feeders has stemmed the flow of winter finches that formerly invaded much of the northern United States at irregular intervals.⁵ Artificial feeding has also led to northward extensions of winter ranges: a well-documented example is the Mourning Dove in Ontario.¹ In addition, feeders allow "half-hardy" birds such as blackbirds and sparrows to linger and sometimes survive the winter well north of their usual range limits. Blom described the need for information on the status and survival of birds occurring north of their usual range in winter.³ This article documents the status of rare and marginal winter passerines in Manitoba.

Scope and methods In the most recent Manitoba bird checklist, only 13 passerine species are described as fairly common, common or abundant in parts of Manitoba in winter: Gray Jay, Blue Jay, Black-billed Magpie, Common Raven, Black-capped Chickadee, White-breasted Nuthatch, Bohemian Waxwing, European Starling, Snow Bunting, Pine Grosbeak, Common Redpoll, Evening Grosbeak and House Sparrow.¹² White-winged and Red Crossbills are irruptive, and sometimes overwinter in Manitoba in substantial numbers. Three other species are uncommon, but regular and widespread: Boreal Chickadee, Northern Shrike, and Hoary Redpoll. A further

55 passerine species have been reported in Manitoba in winter (i.e. December to March) and they are the subject of this article. These species fall into four broad categories:

(a) *Marginal wintering species* for which southern Manitoba lies at the northern edge of their winter range. Their presence is considered normal but numbers fluctuate from year to year.

(b) *Stragglers* which breed regularly in Manitoba but normally winter farther south. Of course, individuals that overwinter in Manitoba do not necessarily belong to Manitoba breeding populations.

(c) *Rare permanent residents* at the northern margin of their year-round range.

(d) *Vagrants* which are unusual in Manitoba (or in a specific region) at any season.

We have estimated the relative abundance and frequency of these species based on available records from 22 winters, 1973-74 to 1994-95 (up to January 1995), and the following criteria: *accidental* (three or fewer records); *occasional* (four or more records from fewer than 10 of the 22 winters with no daily counts of more than three individuals); *rare* (recorded in 10 or more of the 22 winters with no daily counts of more than five individuals); *regular* (recorded in 10 or more of the 22 winters with daily counts sometimes exceeding five

individuals; and *sporadic* (rare or uncommon in some winters but observed in hundreds or thousands in other winters).

We also distinguish between *attempted overwintering* by birds seen in January and February, and *successful overwintering* by birds known to survive beyond March 1. Feeder visitors often become increasingly mobile in March and hence more difficult to track.

A few pre-1973 records, mostly gleaned from newspaper columns, are included where they add perspective. Many records were found in seasonal reports and Christmas Bird Counts (CBCs) published in *American Birds* and elsewhere; others were obtained through personal correspondence and from our own records. It is not feasible to cite individual references for all records. For the most frequent species CBC records from *American Birds* (recently renamed *Audubon Field Notes*) are summarized in Table 1.

Annotated List

HORNED LARK — Regular marginal wintering species. Occurring mainly along roadsides in farmland and prairie. Little time elapses between CBC stragglers and February migrants; some birds overwinter, mainly in the southwest, when snow-cover is sparse. In 1993-94 flocks of 20-30 birds were seen throughout the winter in southwestern Manitoba. In other years midwinter irruptions have been noted during prolonged mild spells.

STELLER'S JAY — Accidental vagrant? There were unconfirmed reports in Winnipeg 25 January 1962 and near Beausejour 19 December 1970. We have insufficient details to evaluate these reports; this species

is not yet included on the Manitoba list.

SCRUB JAY — Accidental vagrant. Manitoba's first and Canada's second Scrub Jay frequented a Fisher Branch feeder between about 6 December 1988 and 8 February 1989, and was photographed.⁹

CLARK'S NUTCRACKER — Accidental vagrant? An unconfirmed report at Hazelridge in February 1930 has been deleted in the copy of the newspaper column in the Manitoba Museum of Man and Nature files.¹¹ This species is accepted on the Manitoba list but we have insufficient information to evaluate this report.

AMERICAN CROW — Regular marginal wintering species. Individuals and small groups overwinter near farmyards, at garbage dumps, and in urban areas, mainly south of 51°N latitude. Occasionally, substantial flocks have been observed (e.g. 85 birds at Sprague 13 February 1994).

RED-BREASTED NUTHATCH — Sporadic marginal wintering species. Often in or near dense coniferous woods. Highest numbers are associated with heavy crops of white spruce cones; a few visit feeders annually. The winter survival rate appears to be high.

BROWN CREEPER — Regular straggler. Wintering status unclear. Creepers occur regularly in spruce forest in December; most are probably late migrants but possible overwintering is difficult to monitor. Few Creepers visit feeders but three overwintered in 1988-89; two in Winnipeg and one at Birds Hill Provincial Park.

MARSH WREN — Accidental straggler. One was seen skulking in a cat-tail stand at Proulx Lake 2 December 1977.

GOLDEN-CROWNED KINGLET — Regular straggler. Wintering status unclear. As with Brown Creeper many December records may be late migrants; this species does not visit feeders and is hard to monitor at low densities in the extensive coniferous forest where it most frequently occurs.

RUBY-CROWNED KINGLET — Accidental straggler. A report at Lyleton 26 December 1978, by an experienced observer, is nearly two months later than any other record of this species.

EASTERN BLUEBIRD — Accidental straggler. Seen at Dominion City 5 December 1948. One was seen alive at Pine Falls on 14 December 1929 and subsequently found dead on 26 December.¹⁴

MOUNTAIN BLUEBIRD — Occa-



*Townsend's Solitaire near Kleefeld, MB,
22 November 1986*

Rudolf Koes

sional straggler. The latest of four sightings occurred at Devil's Punch Bowl, Spruce Woods Provincial Park (Glenboro — Spruce Woods CBC) 2 January 1988. In mild winters the first "spring" migrants sometimes appear before the end of February.

TOWNSEND'S SOLITAIRE — Occasional vagrant. Eastbound fall wanderings have led to four December records as well as overwintering attempts at Winnipeg (2 February 1983 and late January 1994) and Brandon (9-16 February 1983).

HERMIT THRUSH — Accidental straggler. One was reported on Winnipeg CBCs in 1983 and 1993. The 1983 bird was seen in dense woods along the Assiniboine River and the 1993 bird was in a suburban backyard; both were well described.

WOOD THRUSH — Accidental straggler? An extraordinary report of this neotropical migrant on the 1984 Winnipeg CBC was supported by a fairly convincing sketch but the bird was not found again.

AMERICAN ROBIN — Regular straggler. Mainly outside the boreal forest. A few Robins linger into December each year in southern Manitoba. Most disappear around the New Year but some overwinter when heavy fruit crops are combined with relatively mild conditions.

VARIED THRUSH — Rare vagrant, occasionally overwintering. A few Varied Thrushes occur annually in Manitoba, mainly in late fall and early winter. Of 39 that lingered into December, 10 are known to have overwintered. As with Robins, success depends on ample food, adequate shelter, and moderate weather. Varied Thrushes appear to be more inclined than Robins to visit feeders in addition to fruit trees.



Male Varied Thrush at Pinawa, MB, 26 November 1989

Rudolf Koes

GRAY CATBIRD — Accidental straggler? We have no details of a reported sighting 21 December 1957. Several recent mid-November records lend credence to this report.

NORTHERN MOCKINGBIRD — Occasional straggler. Manitoba lies at the extreme edge of this species' permanent range. There are six December records around Winnipeg, and one Mockingbird overwintered at Pointe du Bois, 1982-83 on a diet of fruit and table scraps.¹⁴

BROWN THRASHER — Occasional straggler. Ten winter records include four known overwintering successes; at Winnipeg and Sanford 1982-83, Winnipeg 1987-88, and Pinawa 1989-90. Another survived in Winnipeg until at least 25 February 1987. In at least two cases overwintering success depended on very dedicated feeder operators who provided a fat-rich diet.

CEDAR WAXWING — Sporadic, marginal wintering species. Mainly

outside the boreal forest. Sometimes hundreds overwinter in Winnipeg, Brandon and other towns in southwestern Manitoba; they may outnumber the more "winterized" but erratic Bohemian Waxwing. In Winnipeg they feed mainly on cultivated fruit trees and occasionally also eat dead cankerworm moths.

LOGGERHEAD SHRIKE — Accidental straggler. One on Dauphin CBC 21 December 1985; we have no details of this sighting.

CAPE MAY WARBLER — Accidental straggler. One at a suet feeder in Seven Sisters Falls to 12 December 1987; this bird disappeared after a snowstorm.¹⁶

NORTHERN CARDINAL — Rare permanent resident and vagrant. Twenty-eight records include at least eight males and 10 females; most overwintered successfully at feeders. Most were in or near Winnipeg with outliers at Pine Falls 1975-76, Pinawa 1989-90 and Swan River 1989-90.



Green-tailed Towhee near Altona, MB, December 1981

Peter Taylor

An ambitious pioneer was at Thompson 17+ December 1988.

Accidental straggler? Of three reports at Pinawa two are probably erroneous. One was convincing but may have involved a released bird.¹⁴

ROSE-BREASTED GROSBEAK —



Brown Thrasher at a Pinawa feeder, December 1989

Gerry Naylor



Field Sparrow at a Winnipeg, MB, feeder, 15 January 1989

Rudolf Koes

There are a few recent, authentic November records in Manitoba.

GREEN-TAILED TOWHEE — Accidental vagrant. One bird, Manitoba's first ever, visited a feeder near Altona from 30 November 1981 to 4 January 1982; it apparently succumbed in a severe cold spell.⁷

RUFIOUS-SIDED TOWHEE — Occasional straggler. Nine records include successful overwintering at feeders in Winnipeg 1980-81, Sanford 1982-83 and Brandon 1987-88. One at Pinawa, 1978-79, did not survive beyond about 12 January and one at Cypress River, 1985-86, also perished in early January.

AMERICAN TREE SPARROW — Rare straggler. Overwintering status unknown. This sparrow is a regular winter species as close as central Minnesota but it is not a frequent feeder user and Manitoba winter records are surprisingly scarce. There are 13 CBC records of up to six birds

and a few other early winter records. The latest winter date is 4 February 1990 at Victoria Beach.

CHIPPING SPARROW — Accidental straggler.¹⁵ One overwintered at Pinawa feeders, 1982-83, and one remained in Winnipeg until at least 27 January 1985.

FIELD SPARROW — Accidental vagrant. One frequented a Winnipeg feeder from December 1988 to February 1989. This species is very rare in Manitoba at any season although nesting has been reported.

VESPER SPARROW — Accidental straggler. One bird seen along a roadside at Dauphin 7 December 1980 appeared to be in good condition. One was observed in an open woodlot on the Melita CBC 18 December 1993 and another was reported on the Brandon CBC 19 December 1993.

LARK BUNTING — Accidental

vagrant. One in Winnipeg 2-5 December 1975: this bird was an odd sight indeed in a city parking lot.⁶

FOX SPARROW — Occasional straggler. Seven winter reports include successful overwintering at Balmoral 1980-81, Brandon 1987-88 and Pinawa 1992-93, all at feeders.

SONG SPARROW — Occasional straggler. Usually visiting feeders. About ten recent winter reports include one overwintering success at St. Norbert, 1989-90. Thompson cites a winter observation by C.W. Nash at a stable near Portage la Prairie on 30 December 1885: one of the first Manitoba reports of the winter straggler phenomenon.¹⁷

SWAMP SPARROW — Accidental straggler. One was carefully observed in an open woodlot near a yard on the Melita CBC on 18 December 1993.

WHITE-THROATED SPARROW — Regular straggler. This is the second most frequent emberizine species at Manitoba feeders in winter after Dark-eyed Junco. Successful overwintering has been reported several times.

WHITE-CROWNED SPARROW — Occasional straggler. Five feeder reports include one overwintering at Balmoral 1980-81 and one in Winnipeg until 15 February 1992.

HARRIS'S SPARROW — Rare straggler. At bird feeders, spilled grain and cattle self-feeders. Twenty-eight reports include five known overwintering successes and three birds surviving until February at least but one died at Delta on 20 January 1982. Unusually far north were CBC records at Thompson in 1987 and The Pas (two birds) in 1990.

DARK-EYED JUNCO — Regular, marginal wintering species. Table 1 attests to this species' frequent occurrence in small numbers, mainly at feeders, but also around farmyards in the southwest. There is some evidence that migration continues into December but there are many records of successful overwintering. Most juncos in Manitoba belong to the "Slate-coloured" form but there are 10 winter records of "Oregon" Juncos and lone "Gray-headed" Juncos overwintered in Winnipeg, 1963-64 and 1984-85. Also notable was an overwintering attempt by two juncos at Churchill, 1957-58. So far north, survival by one bird until early March does not really qualify as successful overwintering, especially when predation by a Gyrfalcon was suspected!⁴

LAPLAND LONGSPUR — Sporadic, marginal wintering species. This species usually vacates the province in winter but large numbers are occasionally seen in or near the Red River valley; e.g. 215 near Kleefeld on 1 January 1982, 500 in unharvested grain near Morris on 16 January 1994 and 500 in an alfalfa field near Kleefeld on 15 January 1995. Small numbers are occasionally noted elsewhere. Early migrants sometimes return to southwestern Manitoba before the end of February.

RED-WINGED BLACKBIRD — Regular straggler. Redwings usually occur singly but small flocks sometimes linger in the southwest. The Lyleton CBC total of 45 in 1990 was exceptional. Wintering attempts, with some success, have been noted at feeders, dumps and cattle feedlots.

WESTERN MEADOWLARK — Rare straggler. There are at least 15 records of meadowlarks (presumed Western) in late December or early January. Individuals overwintered at

Table 1. SUMMARY OF RARE AND MARGINAL SPECIES RECORDED ON AT LEAST 10 OF THE 221 MANITOBA CHRISTMAS BIRD COUNTS PUBLISHED IN AMERICAN BIRDS AND AUDUBON FIELD-NOTES, 1973-1994.

Species	Number of Records			Highest Count ^b
	Years	Location	Counts	
Horned Lark	19	11	41	40, Delta, 1994
American Crow	21	14	81	139, Winnipeg, 1994
Red-breasted Nuthatch	20	15	99	60, RMNP ^a , 1991
Brown Creeper	18	10	39	7, RMNP, 1974
Golden-crowned Kinglet	17	12	52	59, RMNP, 1974
American Robin	21	15	57	33, Winnipeg, 1989
Cedar Waxwing	19	16	72	307, Minnedosa, 1988
American Tree Sparrow	9	7	12	6, Lyleton, 1994
White-throated Sparrow	16	12	36	7, Winnipeg, 1991
Dark-eyed Junco	21	18	135	71, Winnipeg, 1989
Lapland Longspur	8	8	18	63, Winnipeg, 1985
Red-winged Blackbird	17	15	60	45, Lyleton, 1990
Rusty Blackbird	19	12	54	26, Rivers, 1993
Brewer's Blackbird	13	9	27	8, Delta, 1989
Common Grackle	19	14	73	10, Winnipeg, 1974
Purple Finch	17	13	44	30, Cypress River, 1988
Pine Siskin	19	17	89	3282, Glenboro, 1994
American Goldfinch	14	14	40	584, Delta, 1979

^a RMNP = Riding Mountain National Park
^b Highest counts include some reported, but not yet published, for 1994-95 CBCs.

Brandon and near Beausejour, 1986-87. Others may well have survived Manitoba winters, huddled among cattle in feedlots. Migrants returned to southwestern Manitoba before the end of February 1981.

YELLOW-HEADED BLACKBIRD — Occasional straggler. There are four CBC records but we have no evidence of successful overwintering.

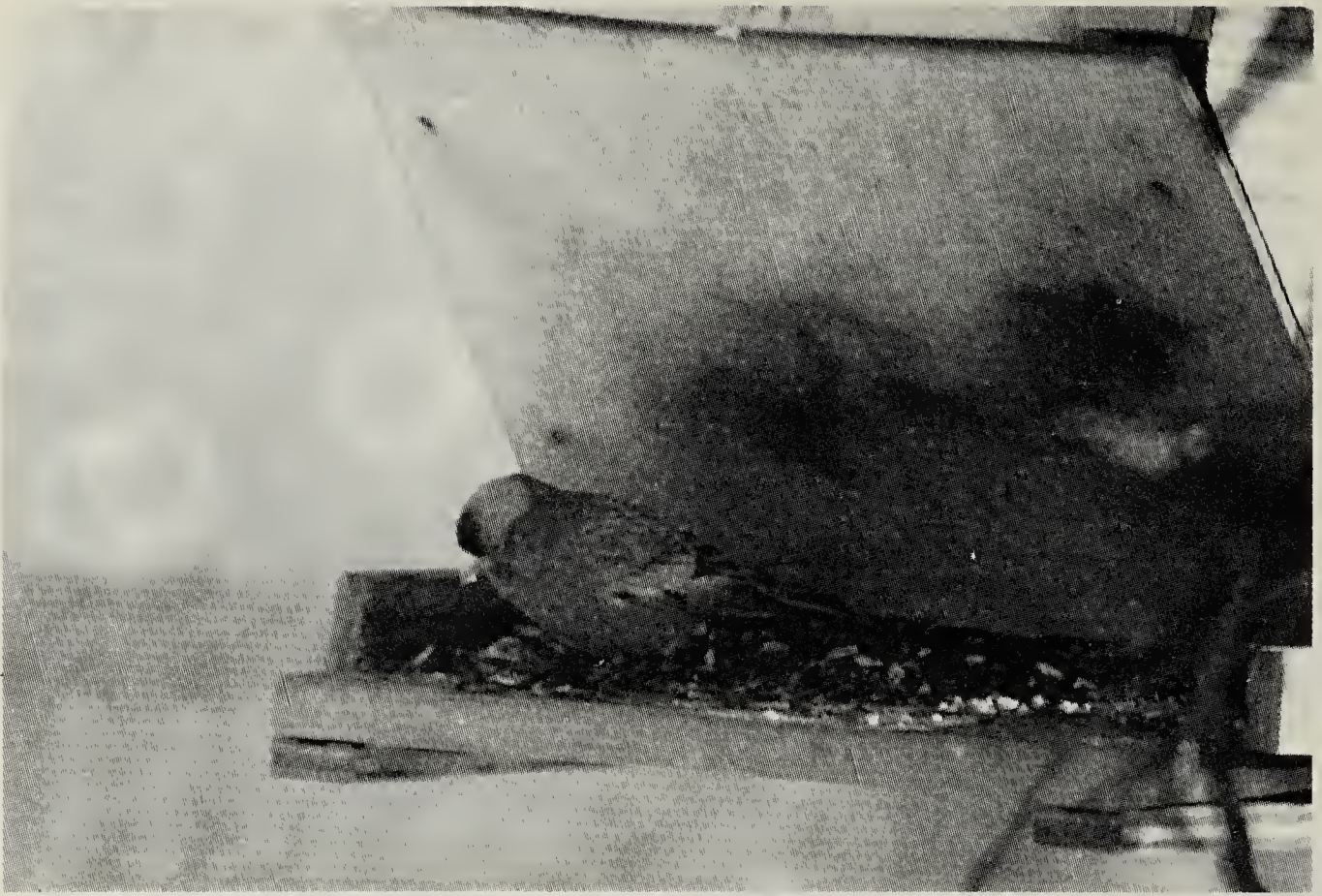
RUSTY BLACKBIRD — Regular straggler. Most frequently reported in the southwest, sometimes in small flocks (birds) and almost invariably among cattle in feedlots. Some probably overwinter successfully; nine were seen at Rivers on 12 February 1983 and one of two noted on the 1978 Cypress River CBC was still present in March 1979.

BREWER’S BLACKBIRD — Regular straggler. Reported less frequently than Rusty Blackbird. Overwintering was reported at Riding Mountain

N.P. 1978-79, Rennie 1979-80 and Kleefeld 1991-92. More information is needed on the comparative wintering occurrence and success of this species and other blackbirds.

COMMON GRACKLE — Regular straggler. This is the most widespread blackbird in winter and by far the most frequent in extreme southeastern Manitoba. It is recorded mainly at feeders, sometimes in groups of up to five birds. Overall wintering success is probably below 50%.

BROWN-HEADED COWBIRD — Occasional straggler. There are four December reports with no evidence of overwintering. One of these was observed inside the Ogilvie Flour Mill on the Winnipeg CBC, 20 December 1980. This species normally leaves Manitoba in August and should therefore be identified with caution in winter.



Gray-crowned Rosy Finch at a Pinawa, MB, feeder, December 1987

Peter Taylor

NORTHERN ORIOLE — Accidental straggler in Winnipeg to 16 December 1987. A male fed on crabapples in a suburban backyard but disappeared after the first real cold spell.

BRAMBLING — Accidental vagrant. Several records of this Eurasian finch in western North America, 1993-94, included three visitors to Manitoba bird-feeders: one at Portage la Prairie, 15 December to mid-January, and two at Bethany, 8-14 January, one of which remained until at least 21 February.

GRAY-CROWNED ROSY FINCH — Occasional vagrant. Thirteen Manitoba records of this wanderer from the Rockies include seven in winter months; most were reviewed by Turner and Taylor.¹⁸ Two have overwintered at Pinawa feeders, 1978-79 and 1987-88. A feisty attitude enabled them to compete effectively with Pine and Evening Grosbeaks. In contrast, a bird found in Winnipeg on

22 December 1977 appeared weak when last seen on 8 January 1978.

PURPLE FINCH — Regular straggler. A few occur at Manitoba feeders each winter, usually singly but occasionally in small flocks: e.g. 14 at Victoria Beach 16 January 1993 and a total of 30 at three feeders on the 1988 Cypress River CBC. The overwintering success rate appears to be high.

HOUSE FINCH — Regular straggler? The status of this feeder species in Manitoba is still evolving rapidly.^{2,13} One possibly overwintered in Brandon, 1991-92, and at least three overwintered in Altona, 1992-93. The 1993 CBC totals included 32 in Winnipeg and 19 in Brandon but there was some evidence that many of these birds withdrew from the province in January. The 1994 CBC tallied 192 birds on eight counts in southcentral and southwestern Manitoba, all at feeders.



Eurasian Tree Sparrow at St. Francois Xavier, MB, 3 January 1987

Rudolf Koes

PINE SISKIN — Sporadic, marginal winter species. The winter frequency and abundance of Pine Siskins in Manitoba have increased dramatically in the last 20 years. CBC totals in the hundreds are now almost commonplace in some areas. Hundreds or even thousands remain throughout the winter in peak years. In southwestern Manitoba they frequent grain piles, sunflower fields, weed patches and feeders. In the southeast they feast on birch seeds during mild spells and concentrate at feeders when it is cold. Heavy mortality was reported in parts of southern Manitoba in 1987-88, whereas mid-winter mobility was indicated by fluctuating numbers and distribution in 1992-93.

AMERICAN GOLDFINCH — Sporadic, marginal winter species. Goldfinches were considered rare in winter in Manitoba until the 1979-80 invasion when thousands thronged feeders, sunflower fields and seed-laden birch trees across the south. A more limited invasion occurred in

1982-83, and small numbers are now reported almost annually, mainly at feeders.

EURASIAN TREE SPARROW — Accidental vagrant. An individual arrived at a feeder at St. Francis Xavier on 2 November 1986 and finally succumbed during its fifth winter around 22 January 1991.^{8,9} It made the best of its isolation and was survived by hybrid House Sparrow X Eurasian Tree Sparrow progeny.¹⁰

Summary The number of species and individuals of marginal and straggling winter passerine birds in Manitoba appears to be increasing. For example, 12 of the 18 highest counts shown in Table 1 were recorded between 1988 and 1994. Many of the species discussed above were found wintering in Manitoba for the first time in the 1970s or 1980s. Several factors may be contributing to this phenomenon. Most obvious is the number of bird feeders, both in urban and rural areas. Also important is the cultivation of

specialty crops such as sunflowers and flax. The former often entices American Crows, blackbirds and American Goldfinches, and the latter Lapland Longspurs. Plantings of conifers outside the boreal forest are often used by Red-breasted Nuthatches, Brown Creepers and Golden-crowned Kinglets for foraging and by other species, such as sparrows, for shelter. We recognize that the apparent increase in some of these species may be a consequence of higher observer effort. For example, the number of CBCs has probably tripled in the last 20 years, more observers are afield in the winter, and reporting methods have improved.

We hope this article will provide a benchmark for detecting future changes in winter bird distribution which may result from long-term changes in climate (e.g. global warming), food supply, habitat or behaviour. We also hope it may stimulate more detailed reviews of the winter status of individual species in the Prairie Provinces.

Acknowledgement We thank Ken De Smet who made helpful comments on a draft manuscript and clarified the status of several species in southwestern Manitoba.

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BARN OWL NESTING IN MANITOBA

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Until 9 June 1994 I had never seen a Barn Owl in the wild but that evening I photographed a female incubating eight eggs. It was an exciting moment. Réal McCaughan led the way up a stepladder to a small hatch opening into the attic of his two-storied house. With his trouble-light we could see the bird crouched in one corner about 12 feet (3.6 m) away. Numerous dried vole carcasses were lying about on a layer of fluffy “cellulose” insulation. At my suggestion, Réal crawled in until he was close to the bird, which until then hadn’t moved. When he touched her with a short stick, the owl jumped up, revealing the eggs, hopped around agitatedly for a moment, then flew

out an opening into the night. We then withdrew. We had verified the first known nesting of this species for the Prairie Provinces.

A more unlikely nest site could hardly be imagined. It was in the attic of a house occupied by a family of seven persons in the hamlet of Springstein, about 6 miles (10 km) west of Winnipeg (Fig. 1-A). The birds had access to the attic through small openings about 22 feet (6.7 m) high at the north and south gable ends of the house. These openings, each about a foot (30 cm) square with a stud in the middle, were left when metal vents were removed during house renovations in fall 1993.



Nest site entrance

R. Nero



James and Jesse McCaughan and author with banded Barn Owl, 9 July 1994

McCaughan family photo

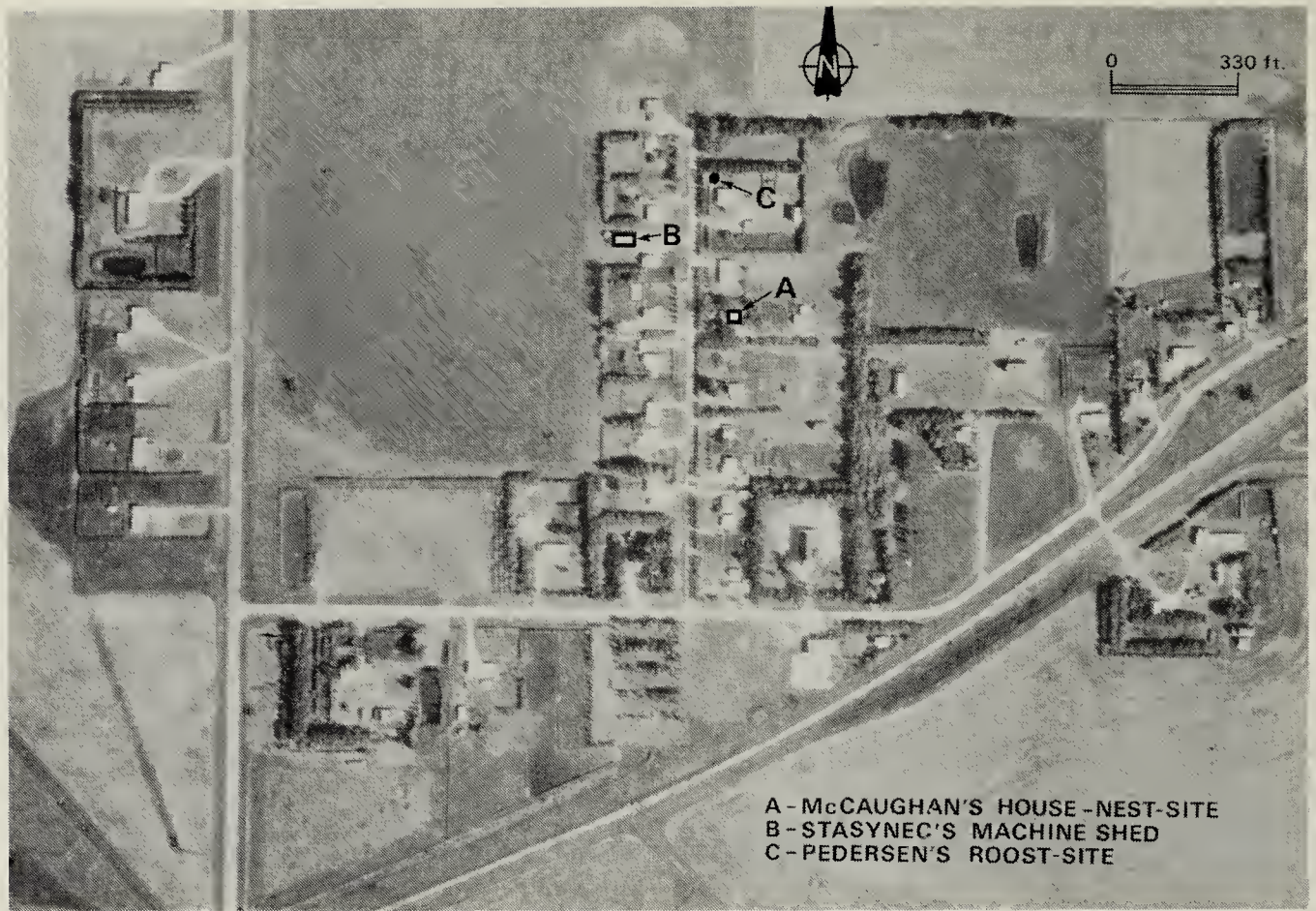


Figure 1. Location of nest sites.

The renovations had proceeded all winter and into summer. Constant hammering, use of a jackhammer, and on one day, even major excavation with a backhoe next to the north end of the house and adjacent to the nest site failed to deter the birds. The nest was close to the vent opening where a large elm stands nearby, providing convenient perches and cover.

Springstein is surrounded by open agricultural land, but the hamlet contains numerous trees, some grassy fields and several dugouts. One of the dugouts near the nest site has become a cattail marsh, attracting nesting Red-winged Blackbirds and other birds. Horse pastures, barns, sheds and houses make up the remainder of the habitat available to the owls.

Réal McCaughan, and his wife Kate, said that initially three “white owls” were seen, beginning on 19 April. Kate said the birds were noisy

and conspicuous, even perching in the elm tree outside her window, from mid-April to the end of May. Their “screeching” calls were heard regularly after dark. A neighbour who lives two houses north, Ann Pedersen, later told me that in April she too had seen three “pale-coloured owls” flying over her yard. Upon checking her bird book, she decided that they were Barn Owls. She was apparently the first person to identify them.

One evening about 20 May, Réal saw two owls “fighting over the female,” and then the bird presumed to be the female went into the attic opening. Egg-laying presumably began some time in late May when the owls suddenly settled down; they became quiet and inconspicuous and the McCaughans thought that the birds had moved away. A little later, however, James and Jesse McCaughan heard vocalizations from owls in the attic, so nesting was suspected. Connie Loeppky, who lives

nearby, recalled that around 4 June, when there were several people partying outdoors in the evening, two owls circled and called overhead. She thought they might be Barn Owls. When she told a colleague of hers about the "Barn Owls," things got stirred up. Adolf Ens, a Winnipeg birder who had previously seen Barn Owls in British Columbia, came out one evening with two other birders. They attempted unsuccessfully to bring the birds into sight by playing taped Barn Owl calls. Late in the evening of 8 June, Ens saw two Barn Owls flying up over the trees and across the street; at 10:30 p.m. he saw another Barn Owl come out of the nest entrance. Following Dr. Ens' confirmation, Kate McCaughan phoned Natural Resources in order to establish "official notice" of the presence of these rare birds. And that's when I became involved.

The evening of 10 June Dennis Fast, who had been contacted earlier by Ens, visited the site with me and took two photos from the hatch opening of the owl on the nest. In order to avoid disturbing the birds any further, it was agreed that we would wait until the eggs had hatched before taking any other action. In addition, as requested by Réal McCaughan, the nest site locality was kept confidential. The location of the nest in a private home precluded making regular observations of the nest itself, so I undertook a search for additional information by talking to neighbours and looking for owl sign. Upon learning from James McCaughan in the evening of 16 June that he had seen a Barn Owl fly in and out of Garry Stasynek's large machine shed just down the street that afternoon, we hurried over for a look (Fig. 1-B). Garry came with us. We found whitewash on the floor just inside the large opening and at the

back, along with several owl pellets, evidence of a roost site. Judy Stasynek recalled that an owl had been in the shed in early spring as well. An owl, probably the male, continued to roost in this shed occasionally through July (and perhaps later). One owl had been seen in the daytime by Ann Pedersen in May roosting in a spruce tree in their shelter-belt (Fig. 1-C); there we picked up several Barn Owl pellets, which conformed to the description provided by Mikkola: "black, characteristically shiny appearance and large size."¹³

Though I looked in several buildings, under trees and by fence posts throughout Springstein, I found few other pellets, and the male's main roost site remained undiscovered. I would have liked to explore further one decrepit old barn, but the owner, worried for my safety, was unwilling to let me climb into the loft. Somewhere, there must still be a large accumulation of pellets from the male owl (and perhaps an owl or two!). Since I was unable to thoroughly examine the entire area of McCaughan's attic, the male's main roost might even have been there. Voous notes: "Day-roost sites and nest sites are generally the same and the female at least tends to stay in her chosen nest site the whole year round. Whenever possible, male and female remain together for life and they sit close together by day."²¹

An owl, presumably the male, was seen occasionally at night by residents. Though mainly nocturnal, Barn Owls sometimes hunt during daylight hours.^{12,21} I spent several hours on a number of days searching for the male, but saw it only on 2 July. I stood beside McCaughan's house late that evening watching the entrance to the nest site. While I was talking to Réal at 11:00 p.m., the

male landed momentarily on the top of a large spruce tree a few yards (metres) from the house. I barely had time to get my binoculars on it before it left. It looked silvery-white against the starlit sky.

Thinking that when the eggs hatched we could transfer the young to a nest box outside McCaughan's house, I built a box 4 feet (1.2 m) long and about 1.5 feet (0.4 m) square. On 28 June, with the help of Réal and his son Joe, we placed it 20 feet (6.1 m) up in the elm tree, about 25 feet (7.6 m) from the house. A layer of insulation, the same as in the attic, was then added to the nest box. That evening, I entered the attic at 9:00 p.m. to check on conditions. To my surprise, the female had moved her eggs about 4 feet (1.2 m), close to the entrance. She appeared more aggressive than on our previous encounter, holding her wings out and softly bill-snapping. I couldn't tell whether the sound was produced by the bill (bill-snapping) or by the tongue. According to several authorities, this sound is produced by the tongue, hence "tongue-clicking" is preferred by some.^{11,12,21} As I approached, she went into displacement behaviour, her head down, going through the motions of rolling eggs back under her body, while still covering the actual eggs. Then she raised up, faced down, and displayed her wings more fully, tongue-clicking all the while. I judged from her behaviour that the eggs were close to hatching.

In the evening of 9 July, we checked the attic for the third and final time and found the female still on the nest. I had decided that if the eggs hadn't hatched by this date, they were not going to, and consequently we should attempt to capture the owl for banding. While I held the

flashlight, McCaughan crawled into the attic with a small net I'd brought along. As he approached, the owl stood silently over the eggs, spreading her wings and swaying. Marti identifies this as a threat display.¹² McCaughan then netted the bird and we brought her down to the landing. After we banded the bird, which was surprisingly quiet and passive, I went back and collected three of the seven eggs (one was missing), all of which were addled (i.e. they "sloshed" when shaken). Houston *et al.* suggest that "most if not all addled eggs represent embryo death."⁹ (Later, when I cleaned the three eggs, the contents, removed through small drilled holes, showed an apparent lack of development. They may have been infertile. Toxic ingredients in the insulation on which the eggs rested — cellu-fibre comes treated with some potent preservatives — also could have adversely affected the eggs.) I hurriedly gathered up 30 small pellets, eight vole carcasses and one deer mouse carcass; one vole was fresh. This took me about 10 minutes. We then released the owl back into the attic and withdrew. Barn Owls typically store excess prey at the nest site. As many as 189 prey items have been found at one site.¹² Voous notes: "When incubating, the female leaves the nest for no more than 10-12 minutes at a time; she is fed by the male, who often stands guard close to her by day, and, in good years, he accumulates a large stock of prey at the nest site."²¹

A day or two after we banded the owl, Ann Pedersen's daughter saw an owl fly in the daytime from the direction of the nest site toward her house and across the street toward the machine shed. This was presumably the male, seen by Garry Stasynec flying out of the machine shed at

Table 1. PUBLISHED RECORDS OF BARN OWLS IN THE PRAIRIE PROVINCES		
Particulars	Location	Date
Manitoba		
Specimen, shot	Ste. Anne	6 November 1912 ¹⁵
Caught in barn	Sperling	ca. January 1925 ¹⁵
Specimen, shot, photo	Whitewater Lake	early October 1927 ^{1,15}
Specimen, shot	La Riviere	8 April 1945 ¹⁵
Sighting	Lac du Bonnet	ca. 1950 ²⁰
Shot	Netley Marsh	20 September 1960 ^{14,16}
Sighting, in barn	Holland	ca. September 1985 ¹⁵
Sighting	Pilot Mound	November 1991 ¹⁵
Saskatchewan		
Sighting, specimen, shot	Balcarres	29 April/1 May 1910 ³
Specimen, shot	Aylesbury	5 May 1924 ³
Carcass	Kindersley	18 May 1960 ³
Sighting	Regina	3 May 1966 ¹⁷
Sighting	Regina	16 October 1987 ⁶
Alberta		
Sighting, heard (2)	Elkwater	22 July 1967 ¹⁸
Photo	Lethbridge	8 July 1979 ⁴

7:30 a.m. on 15 July. Garry also flushed the owl out of the shed at about midnight on 23 July. James McCaughan said he heard two owls in the attic, one of which flew out at 10:30 p.m. on 29 July. My impression is that the female continued incubating to at least mid-August. No further observations are available.

The Barn Owl has been listed since 1984 as vulnerable by the Committee on the Status of Wildlife in Canada (COSEWIC). Godfrey shows it breeding only in extreme southwestern British Columbia and southern Ontario, noting that it winters within its breeding range.⁴ Martin K. McNicholl points out that now “the Ontario population is probably extirpated” (pers. comm. October 1994). In the Prairie Provinces, the Barn Owl is considered a “casual wanderer.”⁴ Published records for that region are shown in Table 1. Nearly all records are of single birds.

The occurrence of breeding Barn Owls in Manitoba at all is surprising, their usual breeding range being much farther south.¹¹ The northern distribution of this species appears to

be limited by low temperatures. Low fat reserves, a slightly lower metabolic rate than for other owls, and feathers with a lesser insulative value are some reasons why Barn Owls are poorly adapted to cold climates; in the northern United States, many succumb to severe winter weather.^{8,12} In Minnesota, the species occurs casually in the southern half of the state, where it “was formerly more regular in occurrence.”⁵ A 1990 nesting south of the Twin Cities was “the first in the state since 1963.”¹⁰ Janssen noted (pers. comm. June 1994): “The DNR put up a nest box in 1991 & they again nested that year but they have not been heard of since nor have we any records of occurrence in the state since that time.” In North Dakota, the Barn Owl is considered “rare, irregular and local”; five records are given, 1915-1952, of which three are for the eastern third of the state, including a nest west of Fargo in 1952.¹⁹ A Barn Owl nest found in southern Montana in 1989 was the first for the state, the first record being a specimen found dead in 1950.⁸ In Missouri, where the Barn Owl is considered endangered,

captive-breeding is being used to supplement the wild population.⁷

Although the sample is small, the Barn Owl records for the Prairie Provinces (Table 1), plus the present 1994 record, curiously show an appearance of clumping. The years of occurrence seem to fall into four groups: 1910-27, 1945-60, 1966-79, 1985-94. This may be merely coincidental, or it may have some relationship to population changes farther south or other factors.

Barn Owls may have been attracted to the Springstein area in 1994 by an abundance of prey. That year, a high vole population was observed generally throughout southern Manitoba. Some landowners I spoke to considered the numbers of voles unprecedented. Owing to an unusually wet season in 1993, numerous unharvested crops provided abundant food and cover for small mammals. Two yards north of the nest site, where flax straw covering a septic field didn't get cleaned up, there were many voles. I watched voles in Pedersen's yard trotting down a ramp from inside an active rabbit hutch and I saw others scrambling next to the concrete steps to the house. From pellets found at the nest site and elsewhere, I obtained crania and mandibles of 84 prey items. These were identified by Jim Duncan as follows: Meadow Vole, 76 individuals; and Deer Mouse, eight individuals. According to Marti, voles are the "dominant prey" of the Barn Owl in much of North America.¹²

The three Barn Owls may also have been part of a small resident population of owls in this area. As improbable as that seems, it may be worth considering. The Barn Owl is a highly nocturnal species, nesting and roosting in a variety of sites including even old machinery, under bridges,

old water tanks, abandoned wells, etc.^{11,12,13,19} These are not places usually checked by birders. In June and July 1994, looking for signs of Barn Owls (and that elusive third one!), I looked in more than 30 deserted houses, barns, sheds, empty granaries, a silo, and under six bridges in the area west of Winnipeg. I didn't find any Barn Owls or their sign, but I found that searching this kind of habitat is dirty, dismal and dangerous (I stepped through the hayloft floorboards in one old barn), and often involves some strenuous climbing. I flushed a Great Horned Owl out of two buildings and found feathers of this species in two others; numerous pellets found nearby were probably from this species. Wayne C. Harris, who has "spent a lot of time searching old barns and buildings in search of owl pellets" in Saskatchewan, has found "a considerable number" of Great Horned Owls, but never a Barn Owl (pers. comm. August 1994). Great Horned Owls could be a factor limiting Barn Owl occurrence, for they are considered to be the Barn Owl's "main natural enemy in North America."²¹

It appears that Barn Owl habitat in this area is plentiful, most of the available structures I checked being close to or surrounded by trees, grassy fields, dugouts and cropland. Cowan has shown that following an increase in numbers of derelict houses, barns, sheds, etc. in the northern Great Plains over the last several decades, the Raccoon, which shelters in such structures, expanded its range northwards.² Perhaps the same abandoned structures have provided shelters for the Barn Owl. Records of this species in Manitoba go back some 80 years. That seems a long time for a species to occur in an area solely on the basis of casual wandering. We now



Springstein, MB, looking west.

R. Nero

know that nesting can occur here. Although the Barn Owl generally is non-migratory and a permanent resident within its known range, banding records show that it is capable of travelling considerable distances.^{11,21} Hereafter, we will have to give more attention to reports of owls observed in barns; they just might be Barn Owls.

Acknowledgements This report would not have been possible without the cooperation of the entire McCaughan family: Réal and Kate, and James, Jesse, Joseph, Joleen and Julie. I am grateful to them for their hospitality and goodwill. Thanks are due their neighbours: Garry and Judy Stasynek, and son Brian; Ron and Connie Loeppky and family; Len and Ann Pedersen and family; Gerry and Shirley Sawchyn, Ed and Lynn Brown; Don Slobodzian and son Dustin; and others.

Special thanks are owed to James R. Duncan for identifying the prey remains and for joining me on some

nighttime watches. Barn Owl specialist Len Soucy kindly provided a nest box design and considerable encouragement. Herbert W.R. Copland helped locate some records. Herb, on short notice, also supplied the band we put on the owl. Gordon G. Graham's comments on a draft were helpful; he also typed final drafts of the manuscript.

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Réal McCaughan observing Barn Owl on nest, 9 June 1994.

R. Nero

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OBSERVATION OF AN AMERICAN MINK CLIMBING A TREE

SERGE LARIVIÈRE, 829 Main Street, Saskatoon, SK. S7H 0K2

Members of the family Mustelidae such as American Marten, Fisher, Wolverine, and weasels are known to climb trees.¹ Jackson² believed that mink "may rarely climb small trees to a height of about ten feet." Similarly, Dekker³ reported tree climbing by an American Mink chased across a pasture. However, accounts of this behaviour remain rare in the literature.⁴ I herein report an eyewitness account of this behaviour for a wild American Mink inhabiting the parkland region of central Saskatchewan.

On 25 April 1993, while live-trapping Striped Skunks, I captured an American Mink in a live-trap located 24 m from open water in the forested perimeter of a permanent wetland 10 km northwest of Krydor. Upon release from the trap (6:50 a.m. CST), the animal ran 1 m to the nearest tree, a balsam poplar of 17 cm of diameter, and climbed to a height of 2.5 m. After staring and hissing for about 5 seconds the animal climbed down 30 cm and jumped to another balsam poplar (16 cm in diameter) 1.5 m away. Still hissing, it climbed down head first to 1.5 m off the ground and leaped, landing approximately 1 m from the base of the tree. It then ran towards open water and disappeared in the surrounding dense vegetation of cattails, willows, and red osier dogwood. The observation lasted less than 60 seconds.

It is surprising that, with open water within 24 m of the site, the mink

chose to climb a tree instead of simply fleeing towards the open water. Tree climbing may be used as an escape strategy by American Mink when threatened by terrestrial predators, especially when other escape strategies such as diving or hiding are not possible.

In prairie environments, American Mink usually rest in muskrat burrows, ground squirrel burrows, rockpiles, brushpiles, culverts and stands of emergent vegetation.⁵ Considering the ease with which the American Mink climbed the tree, it is possible that resting in trees may occur under certain circumstances. However, the extent to which tree climbing is used by American mink for escaping predation, or for other activities, remains unknown.

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A WINTER RECORD FOR THE SILVER-HAIRED BAT IN SASKATCHEWAN

R. MARK BRIGHAM, Department of Biology, University of Regina, Regina, SK. S4S 0A2

The Silver-haired Bat is widely distributed in Canada during the summer, and one of the more common species found in the Prairies.¹ During winter, this normally migratory species has been recorded only from British Columbia, principally the southwestern corner of the province,^{2,3,4} although some individuals have been found in the southern interior in mid-winter, presumably hibernating.⁵

To my knowledge there are no winter records of Silver-haired Bats in Saskatchewan. The latest recorded date of capture that I am aware of for the province is 12 October.⁶ Early October is typically the end of the time of departure for migration in most parts of Canada. When I was called to a building to collect a bat on 21 December 1994 in Regina, I expected it to be a Big Brown Bat since this species regularly hibernates in buildings. It came as quite a surprise to find that it was a male Silver-haired Bat. The bat, which was in an emaciated condition, was found by the tenant of a building in the 2200 Block, Albert St. Based on the degree of ossification of the metacarpals, it was a juvenile born in the summer of 1994. I brought the bat into captivity and gave it food and water, but unfortunately it died two days later.

Whether it had been attempting to hibernate in the building or elsewhere in Regina or whether it was a very late migrant is not known. Big

Brown Bats which attempt to hibernate in buildings are often found in very poor condition flying around inside during the winter. This most commonly occurs after a change in weather (colder or warmer).⁷ Presumably, individual bats choose poor sites to hibernate and arouse to move. The weather turned quite warm on 20 December in Regina, which prompts me to speculate that the Silver-haired Bat had been hibernating in the area. I thank Shawne Arzab for bringing the bat to my attention.

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POETRY

THE TURNCOAT

I saw a rabbit on the lawn today.
And what was strange about that?

you say,

Well, nothing really at all, except
That he was brown as you'd expect,
But his ears were white.

Now I've never spoken to him before
Though I'd seen him sitting by the door
During the winter. In sober white ——
Early morning and late at night,
But now his colour was brown.

I had to say to him, "Look Bunny
Please don't think I'm being funny
But make your mind up about your ears
And turn them brown, For summer nears
and white's not right!"

He looked at me as much to say
"Mind your own business," and hopped
away

But as he went he turned his back
On me, and I saw as he hopped on
another tack

His scut was also white.

I haven't seen him again this week
Maybe he thought what I said was cheek
But in this world you've got to be
Either one thing or the other you see.

AND THIS RABBIT WASN'T!

- Dorothy M. Lacey, Box 1855,
Tisdale, SK. T0E 1T0

PERFECT PICTURE

Past the boat
In a dead man's float
A shining rock
Began to slip
Then dip
Beneath the dock.
Then arose
An ebony nose.
Glassy eyes peered
Feline sharp ears
Reared...
Nonchalant,
This gallant,
Sensing human presence,
Pretending not to know,
Proceeded with the show.
Slunk below...

Then the watery curtain parted
And upstarted
The star
To centre stage.
On that rocky boulder
Light-footed stood
From tail to shoulder.
Front paws cupped;
Chin tilted up,
The beaver chose
To pose.

- Margaret P.M. Luke, Box 206, Porcupine
Plain, SK. S0E 1H0



Snowshoe Hare

Gary W. Seib

LETTERS

A LOGGERHEAD SHRIKE ENCOUNTER

Often the most thrilling experiences in the field are also the most unexpected. This proved to be the case for me on 8 May 1993 as I conducted grassland bird surveys as part of my Ph.D. research. I was working in the Matador Community Pasture (30 km southeast of Kyle, SK) and had done two surveys that morning, which had dawned cool and bright. To ward off the early-morning chill and heavy dew, I was decked out in warm clothes, rubber boots and rain pants. The sun was finally starting to gain strength as I finished my last sampling period, so I decided to lie down and relax for a few minutes.

I had just closed my eyes and was enjoying the warm sun on my face when the sound of nearby, rapid

wingbeats and a slight pinch jolted me awake. A Loggerhead Shrike had landed on my left knee! There was no doubt as to the bird's identity. At such close quarters its distinctive black facial mask and dark bill were unmistakable. As I looked up with a start, the bird leapt away and flew off over a slight rise. I'm not sure which of us was more surprised!

Why had it ventured so close? Shrikes, hawks and other predatory birds are often observed on elevated perches, from fence lines to hydro poles, where their keen eyesight can be used to full advantage in the search for prey. Perhaps my up-raised knee was simply a convenient perch in an otherwise flat prairie landscape. Another more outlandish possibility is that it mistook me for food. After hearing this story, friends joked about finding me impaled on a hawthorn bush or barbed wire, which



Loggerhead Shrike

Doug Collister



Cricket impaled by Loggerhead Shrike

Doug Collister

is how shrikes sometimes deal with their prey.¹

Whatever the reason, I feel fortunate to have had this experience. Loggerhead Shrikes are threatened in Western Canada and endangered in the east.² Habitat loss is thought to be part of the problem, especially large-scale conversions of pasture to cropland.^{2,3} Matador is particularly valuable in this light since much of the pasture (including the spot I was lying on) is a rare and significant type of mixed-grass prairie which has never been cultivated. As shrike habitat and for many other reasons we should continue to protect and study it.

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- Glenn C. Sutter, Dept. of Biology, University of Regina, Regina, SK. S4S 0A2.

GOPHER VS CHIPMUNK — AND THE WINNER IS! THE GREAT PEANUT CAPER

First, a little background to my story. As I live in Regina, I really enjoy visiting a friend who lives on a farm east of Southey. On several previous occasions, I had fed shelled peanuts to a "Least" chipmunk that showed up one day by the house. The chipmunk would come up to my hand and take an unshelled peanut from my fingers. I observed him eating it. He would slowly unshell it, carefully take the husk from it and eat it with great refinement.

After a couple of weeks of throwing peanuts to this chipmunk, I began to notice that a "Thirteen-striped" gopher (yes, I counted his stripes) was observing (from a distance)



Thirteen-lined Ground Squirrel

Wayne Lynch

what was going on. I didn't think that this gopher would come anywhere near me so I tossed a peanut far in his direction. He grabbed it, put it in his mouth and took off. I began to toss them closer and he cautiously got them. After a half dozen tosses, I threw caution to the wind and held a peanut shell in my fingers. Sure enough, he came up, grabbed his prize and headed for the hills (so to speak!). After a few more times of taking peanuts from my hand, he proceeded to eat them next to my feet. He even let me rub the top of his head. After a few pats he moved a few inches away, seeming more annoyed than fearful. His eating habits were nothing like that of the well-mannered chipmunk. This gopher would grab the peanuts, attack the shell, with husks flying, and shove them into his mouth and into his side pouches. When these pouches became full (very full), he would dart off to unload his treasures in some secret hideaway.

One afternoon in mid-June 1995 I was out enjoying some shade next to

the garage when I noticed the gopher close at hand. I reached for my supply of peanuts (which by this time I never left the house without) and soon had the gopher eating from my fingers. Well, at this time the chipmunk also showed up. Having the two show up at the same time was indeed a first! I tossed peanuts at the chipmunk to keep him from getting too close to me (and the gopher) for fear that the gopher would attack him. Once the gopher saw that the chipmunk was also taking advantage of these peanuts, he proceeded to take peanuts into his mouth at even a faster rate! I continued to feed both the gopher and the chipmunk, which were on opposite sides of my lawnchair. At one point, I suspect I must have been too slow in giving the chipmunk his next peanut as he rushed over to the gopher who had a stash beside him. They eyed each other and I became rather concerned that the gopher would go after the chipmunk. After a 30-second stare, the chipmunk must have realized he was outmuscled and took off.



Northern Mockingbird

Doug Collister

The gopher continued to store peanuts in his mouth — clearly the winner! On a separate note, while feeding the gopher, I noticed a caterpillar moving across the grass. I never gave it a second thought until I saw the gopher pick it up and begin to spin it in his paws. He would spin it for a few seconds and then stop and look at it. If the caterpillar moved, he would once more spin it, stop and stare at it. After four spins, he stopped and the caterpillar lay still. It was then that he proceeded to eat it. It was something that I didn't think he would eat, but I'm beginning to discover that with nature, you just never know!

- Carol Bessant, #901 — 2720 College Avenue, Regina, SK.

UNUSUAL BIRDS IN CENTRAL SASKATCHEWAN

Last summer (1994) we stayed in a number of different towns in the southwestern United States enjoying the oases of lush grass and spread-

ing trees between the miles of desert. In three places we spotted mockingbirds, our first sightings ever, though we had seen its cousin, the catbird, in central Manitoba.

One stay was for two weeks in June and we often saw the mockingbirds flying around the lush garden, often in pairs; the large white patches on their wings as well as on their tails (which often cocked up on landing) were quite distinctive. Their song was delightful too, and they became my favourite bird then.

On 16 October 1994, in Prince Albert, I was walking in the Crescent Heights area when I saw a bird alight on a post by the side of the street — a robin I thought, at a distance, but as I came nearer it cocked its tail and flew away, showing distinctive white patches quite clearly. I mentioned this to friends and they said they had seen a strange bird in the garden and couldn't think what it was. ... Further along the street, there it was again, scrabbling about

at the edge of the road, under a shady tree.

I walked by there twice more that month, seeing the bird the last time on 30 October, in a border under a window, apparently finding something to eat. Two days later came ice and snow and the bird was seen no more — did it fly south?

A week or two later someone else a couple of blocks away came home from work and found a grey bird dead on the top step having flown into a nearby window, leaving grey feathers. It was thought to be a Gray Jay who had, perhaps, gorged on the nearby rowan berries. It was put out in the garbage. I wonder?

I subsequently heard CBC Regina ask people to take part in the bird count starting 1st December and, in particular to watch for a late migrant, maybe a robin, a nuthatch, or even a mockingbird from the eastern United States. Presumably they have been seen around Regina from time to time. Nobody seems to have seen a mockingbird in these parts and many ask what it looks like. Any ideas as to how far they may spread?

Referring to the March 1995 edition of *Blue Jay*, I too saw a House Finch at a bird feeder about 5 miles south of Prince Albert in April 1992 — I had seen them at the coast. I have also seen a Ruby-Crowned Kinglet and a common Yellowthroat once on migration. Not too common, it seems.

Additionally, a group of us at Emma Lake in June 1991 spotted an American Avocet. We had seen this species between Prince Albert and Saskatoon earlier the same month. People here don't seem familiar with this.

- Maureen Wright, #518 — 24th Street E.,
Prince Albert, SK. S6V 1S2

NATURAL HISTORY NOTES FROM CROOKED LAKE, 1995

In early June I returned briefly to my boyhood haunts at Crooked Lake in the Qu'Appelle Valley. On 12 July at Cedar Cove Resort I saw a tomato-red male House Finch in full song (a cross between a Vesper Sparrow and a domestic canary). There are two previous sightings for the Qu'Appelle Valley by Callin at Fort Qu'Appelle in 1979 (*Birds of the Qu'Appelle 1857-1979*) and in 1980 (Houston and Houston, *Blue Jay* 44:69-84). I am familiar with this species from my years on the B.C. Coast, where I found a nest in the English ivy covering the side of a lodge on Gabriola Island, and once saw a lovely male in full song on a shop sign in one of the grubbier downtown areas of Vancouver, with no vegetation in sight.

Even more exciting to me was the behaviour of an Eastern Phoebe. I was operating a blacklight trap for moths at Melville Beach. In the mornings an Eastern Phoebe was perched by the gauze cage, intently watching the moths flying about inside. One morning I released a few tent caterpillar moths while it was perched nearby, and it quickly took them on the wing. I soon found that three or four was its limit; it would then disappear for an hour or so. By the third day, it would take the fluttering moths directly from my fingers. At one point, while I was lying in the lounge chair nearby reading, it used my knee briefly as a perch. I took the opportunity to offer it a selection of arctid moths (*Hypoprepia*; *Spilosoma*; *Grammia*; & *Hyphantria*) whose showy red, orange or white colouration supposedly protects them by warning predators of their unpalatability. The phoebe wolfed them all down with no discrimination, wings and all.



Bobcat

Wayne Lynch

During this same period, while lying on the same lawn chair, I was attracted by soft “kruk” calls coming at a slow, regular beat from the grass some distance away. Upon investigating I discovered a large Wood Frog grasped crosswise in the jaws of a medium-sized Plains Garter Snake. As frogs are not all that common here, I sided with the snake, which had managed to find and obtain such a fine one. I watched for the approximately half hour it took the snake to work its way up the front of and then engulf the hapless frog, a morbid but fascinating sight that must be seen to be believed.

This was the first year I was unable to find any Northern Leopard Frogs at Crooked Lake. During the 1950s they were abundant, and as recently as 1992 I was still able to find a few along the waterline after dark. This year only a dozen or so Wood Frogs were seen, which I do not recall finding in the past except for the odd individual.

The smallest of the little predators

that I observed was one of the common orb-weaving spiders that have webs under each light or lighted cabin window. While brushing my teeth outside the back door of the cabin one evening I noted a Small-eyed Sphinx (*Paonias myops*), a medium-sized but nevertheless powerful sphinx moth, blunder into a web which I assumed would not hold him for more than a few seconds. The spider dashed out and mounted the moth, bringing to mind the story of the mouse on a date with the giraffe. Hope springs eternal thought I. To my surprise and admiration, within moments the spider had the upper hand, and the moth went limp. In the morning all that remained was the carcass with wings attached.

- Gary G. Anweiler, 7212 — 103rd Avenue,
Edmonton, AB. T6A 0V1

BARNYARD BOBCAT

A hot sunny mid-morning in June 1994 found me working in the barn on our ranch in the South Saskatchewan River Valley. Suddenly the

sound of Long-billed Curlews giving their warning calls was heard. Soon several Black-billed Magpies joined the curlews in a noisy chorus. Must be a coyote around, I thought, as magpies often follow the coyotes. My horse had been standing outside the corral waiting to be let in. Suddenly he gave a loud snort and galloped away to the far corner of his pasture. He's not afraid of coyotes, so I hurried outside to see what was causing a disturbance. Standing partly hidden behind a slab fence, I looked across the horse pasture and saw the back of a tawny animal about the size of a large collie dog coming through the tall waving grass. It came up to the corral and stuck its head through the rails. It was a Bobcat, only 16 feet away from me across the small west corral. I moved slightly, the Bobcat noticed me, then he trotted up to the feedstacks through the centre of the yard between house and barn and disappeared into a grove of maple trees.

As Bobcats are extremely shy animals, I was surprised to see one come around occupied buildings in the daytime, acting as unconcerned as a barn cat would be. My guide books describe the Bobcat as tawny with spots and streaks, shorter ear tufts than a Lynx. Tail black on upperside only and striped with black or brown, whereas the Lynx has a complete black tip on the tail and the tail is not striped.

- *Daisy D. Meyers*, Box 218, Leader, SK.
S0N 1H0

A HOODED WARBLER RECORD IN THE EASTERN QU'APPELLE VALLEY

On 3 July 1995 I was making my last mist net check in a Monitoring Avian Productivity and Survivorship (MAPS) study area in the Qu'Appelle Valley north of Whitewood. I was closing all the nets and found a lone

bird in the last net. At first glance I thought it was a male Wilson's Warbler because it had a black cap. I thought this was early in the summer for Wilson's Warbler to show up, but I had caught them before this. When I reached into the mist net to free the bird, I realized this was not a normal Wilson's Warbler. It felt too large — and then I saw the white tail spots. I knew then that this was a species I had never before seen.

I carefully extracted the bird and placed it in the bird bag knowing that too often it is the rare birds that seem to escape prematurely before banding and recording. Once back at the banding area, I checked through my reference material, and it was clear I had caught a female Hooded Warbler. This female had an extensive black cap extending from its eye back to its neck. As well, it had a faint black necklace. The plumage and wing measurements fit the species' description.

Perhaps more interesting was the brood patch on this bird. The skin was vascularized with some fluid buildup. It is unlikely this bird was breeding in the study area as I had not seen any males or heard their song in the area. After I released the bird, it did not reappear on subsequent mist netting and other outings in the area.

I have often caught unusual birds at the height of breeding season — species like Tennessee Warbler, Nashville Warbler and Yellow-breasted Chat — unusual because they are out of their normal breeding range. This species, however, is way out of its normal breeding range of eastern United States and the extreme south of Ontario. There are two other confirmed records of Hooded Warblers in Saskatchewan.

- *John Pollock*, Box 353, Whitewood, SK.
S0G 5C0



Souris River Valley at Roche Percee

Boyd Metzler

A SOURIS RIVER BIRDING HOTSPOT

The Souris River in southeastern Saskatchewan is known for its interesting birds. One particular section of the river valley that is readily accessible to bird watchers begins south of the Shand Power Station outside Estevan. Here a gravel road winds east along the valley passing by eroded valley banks, through brushy areas, beside the heavily treed riverbank, hay fields, hoodoo-like formations and through native prairie in the Coalfields PFRA Pasture.

I have made several trips through this area, and on each trip I have found one or more rare Saskatchewan species such as Indigo Bunting, Field Sparrow or Yellow-throated Vireo. On the eroded valley slopes I have found a Rock Wren with Rufous-sided Towhees and Lark Sparrows singing from nearby bushes. Northern Rough-winged

Swallows and Common Nighthawks may be seen overhead, and Golden Eagles have occurred in the area. Willow Flycatchers and Eastern Bluebirds have occurred along the valley, and a trip through the heavily treed Roche Percee Campground will yield Black-and-white Warblers, Ovenbirds, Veerys and American Redstarts. White-breasted Nuthatches, Belted Kingfishers, and Black-billed Cuckoos may be heard along the river. One might also find Eastern Wood-Pewees or Blue Jays here. In the open prairie of Coalfields Pasture, a short climb out of the valley, Upland Sandpipers, Baird's Sparrows, Chestnut-collared Longspurs, Short-eared Owls, Sprague's Pipits, Le Conte's Sparrows, Grasshopper Sparrows and Ferruginous Hawks may be found.

On one trip to the valley with Boyd Metzler, we decided to explore a "hot" spot that Al Smith found north of Roche Percee among rock outcroppings. While eating lunch on

some hoodoo-like rock formations, we were dazzled by a male Indigo Bunting, Lazuli Bunting, Field Sparrow, Lark Sparrow and Say's Phoebe — all demonstrating territorial behaviour. It was one of the most interesting lunches I have ever had.

These species may not be found on every trip, but most can be found with a bit of hiking and exploring along the valley. In addition to the bird life, this section of the valley has interesting geological formations and numerous wildflowers. A trip along this unique valley is always rewarding.

- John Pollock, Box 353, Whitewood, SK.
S0G 5C0

NOTES FROM BIRCH HILLS

I have three informational items. First, I live on a quarter section of land where the farmyard is surrounded by trees. We don't have cats, consequently songbirds are not preyed upon by what has been called a privileged predator. One mid-morning during the first week of July I was drawn outside by the highly agitated voices of the three pairs of robins that nest here. When I got to where I could observe the cause of the noise, I was just in time to see the robins, soon joined by a pair of Eastern Kingbirds, mobbing a Big Brown Bat. The bat was making a valiant effort to evade the harassment, but the birds were extremely ferocious in their attacks and the bat was forced to fly into the adjacent aspens after which the birds returned to their respective territories.

I'd never seen such extreme behaviour from robins or kingbirds, not even when a Long-tailed Weasel skipped across the yard one week later. During the chase, the bat was making screeching sounds while the birds seemed to be cooperating in

the attack. Two would fly alongside while a third one would fly close enough above the bat to peck at its head. Even though the wingspan of the bat appeared to be equal to the robins, there was no way he could avoid his tormentors.

The second item has to do with a different type of predation. Our farm water supply comes from a large dugout around which my wife and I have erected some bluebird/Tree Swallow nest boxes. One of these houses had seemed to be a death trap for the swallows and I was on the verge of destroying the box when, in late June, I happened to be going to the dugout to check on the shrubs we've planted there. I heard a commotion originating in the "killer" birdhouse and when I approached it, out flew a House Sparrow. When I opened the house, a Tree Swallow was in its death throes on the floor. The back of its head was bloody and its feathers in disarray.

Discussions with another birder suggested that House Sparrows have been suspected as killers in other areas of the province, particularly where nest box routes had been established. In addition, in all the instances of finding swallows dead in this particular house, there was no evidence of the bodies having been used as food. They seemed to have been killed simply because they were there. The solution to this problem became evident when I measured the entry hole and found it to be 1.5 inches. Subsequently, I cut out a piece of wood with a hole of 1.25 inches and nailed it over the "killer box" entry. Since then, though Tree Swallows have been observed going in and out of the box, no more dead swallows have been found.

Thirdly, on July 22, my wife and I were travelling from beach to beach

on the west side of Waskesiu Lake, taking photographs and viewing the wildlife. At the very north end of Payton beach I happened to be scanning a group of 20 or so Ring-billed Gulls when I saw a couple of "gulls" that didn't seem quite right: their feet were red. Then, when I looked more carefully, I noticed that not only were there legs shorter, but that they looked more like terns, despite being

the same size as gulls. A closer examination revealed a pair of Caspian Terns. We were able to take several photographs before the birds were spooked by the approach of several people. The terns flew north towards the Narrows.

- M. Maraschal, Box 301, Birch Hills, SK.
S0J 0G0



Brockelbank Hill

Wayne C. Harris

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PLANTS OF THE WESTERN BOREAL FOREST AND ASPEN PARKLAND

DEREK JOHNSON, LINDA KERSHAW, ANDY MACKINNON and JIM POJAR, with contributions from TREVOR GOWLAND and DALE VITT. 1995. Lone Pine Publishing, Edmonton, AB. 392 pp., soft cover. \$24.95.

This book contains a comprehensive coverage of plants of the area. It has sections on trees, shrubs, wildflowers, eating for a living (sundew, pitcher plant, parasites etc.), aquatics, sedges, rushes, grasses, ferns and fern allies, mosses and liverworts, and lichens. The first section encompasses an excellent description of the book and how to use the guide. The region that the book pertains to and the relationships of plants and people is well prepared and written.

Each plant species is treated in a highly informative way, containing a general description, leaf characteristics, flower descriptions, fruits and seeds, where found in habitat types and additional notes. The additional notes contain information about the human/plant relationship if any, discussions about similar species not directly referred to in the book and other quality information. Line drawings are liberally used to detail finer points of identification that can't be effectively photographed. Keys are used sparsely and where used will definitely assist the novice as well as satisfying those who are more familiar with plant identification.

The last section of the guide contains an easy to understand glossary, photo credits, illustration credits and a very comprehensive section on references.

This guide shines in several areas. As an example, its section on willows is top notch. The extensive part dealing with grasses, sedges and rushes is one that is most often missing from other books of this kind. Though the contents are not arranged in taxonomic order in the strictest sense, the treatment of plant relationships is excellently portrayed with taxonomic order adhered to in each section.

There are aspects of the guide that may be wanting. One is in the size of picture. However, one must hasten to point out that the images used are of the highest photographic and reproductive quality, in some instances just a little small for detail. The line illustrations do fill the detail requirement very well. The only other aspect that may be of annoyance to some — there is no obvious statement of how many species descriptions are contained in this excellent piece of work.

- Reviewed by *Frank Switzer*, 1301 Shannon Road, Regina. SK S4S 5K9

ALBERTA BUTTERFLIES

C.D. BIRD, G.J. HILCHIE, N.G. KONDLA, E.M. PIKE and F.A.H. SPERLING. 1995. Technical photographs by SIMON POLLARD and JACK SCOTT. Ink illustrations by MILTON FREDLAND. Provincial Museum of Alberta, Edmonton, AB. 347 pp. 280 x 215 mm. \$45 + 3.00 postage and handling. (Order from the Federation of Alberta Naturalists, Box 1472, Edmonton, AB. T5J 2N5.)

This is a fantastic book! There are probably more coloured illustrations per species than in any other regional butterfly guide. It is unique, not in the fact that it uses keys to

identify butterflies, but in that it illustrates each of the alternatives of a couplet with colour photographs, further aided by arrows pointing to significant marks.

Separate chapters treat the history of the book and give brief biographies of 80 people who contributed to the wealth of knowledge about Alberta butterflies over the last 150 years. This is followed by sections on butterfly habitats, evolution/life history/ecology/behaviour, butterfly study, adult morphology, butterfly names, and a checklist. For the gardener, a table shows which of more than 160 plants serve as caterpillar food and/or adult nectar sources for which of more than 100 kinds of butterflies.

This volume covers not only the 161 species found in Alberta but gives equal treatment to 16 likely to occur. The keys for 177 species are illustrated by more than 400 mini-photos of appropriate segments of wings — each in the order of 15 x 20 mm. There are also four tables comparing particularly difficult species, 18 photos of living butterflies and 20 attractive shots of landscapes. The aesthetics of the book are considerably enhanced by more than 180 ink illustrations, mostly of food plants but also of caterpillars. The extensive bibliography includes some 600 titles.

For each species, the derivation of the scientific name is given (which makes interesting reading) and there are single paragraphs on identification, life history and range/habitat. Three-quarters of the species are each given a page; the remainder have two or three pages. Photographs of whole pinned specimens (more than 550) are life-size and show upper and lower surfaces. A monthly bar graph shows the entire

flight period and indicates when a species is most common. The provincial maps are attractively coloured and show every collecting locality for each species and, in some cases, for subspecies. A neat feature is the inclusion of a map showing North American ranges.

One learns that the most widespread butterflies in Alberta include Canadian Tiger Swallowtail, Clouded Sulphur, Greenish and Western Tailed Blues, Milbert's Tortoiseshell and White Admiral. Species confined to grasslands include Delaware Skipper, Olympia Marble, Alexandra Sulphur and Ruddy Copper; to the boreal forest, Eastern Pine Elfin and Pike's Swallowtail; to the mountains, Margined White and Lustrous Copper.

One should not be as naive as we were about ease of identification because of illustrated keys. For us, the wording in several couplets has not been clear, even with the arrows. However, the more you use them (with a magnifying glass), the more you appreciate them. The authors are to be particularly congratulated for this feature.

Every butterfly guide (and this is no exception) presents some new common (English) and scientific (sci) names, which makes it frustratingly difficult to compare the treatment of a species from one book to another. The North American Butterfly Association recently published a standardized list of common names for North American butterflies.¹ Hopefully, for the benefit of the "butterflier-on-the-street," future authors will follow this list both for common names and sequence of species.

For me, the major problem with this volume, produced to be "accessible to a wide range of readers," is

its emphasis on scientific names. Imagine your reaction if the third paragraph above had used sci names only. The checklist could have been designed to include common names but none are used; keys lead to identification by scientific names only; the identification, life history and range paragraphs for each species often refer to similar species by Latin/Greek names only; the first name in the species accounts is scientific, and the labels for photos of live butterflies are in the same foreign languages. The reason given is the universality of sci names. However, a comparison of this book with the North American Butterfly Association Checklist, also published in 1995, shows that 27 common names are different and 27 scientific names are different between the two, suggesting that a common name is just as “universal” for North Americans as a sci name.¹

At a time when butterflies need all the public support they can get to survive (eloquently expounded in the Foreword), it seems a shame to turn off potential “butterfliers” by making them think they have to learn “formal and ... ponderous Latin and latinized names” (Foreword) that are “intimidating” (p. 43). The Peterson, Audubon and Golden series of guides put the emphasis on common names in all fields of nature that they cover. Hardly any birders use, know, or care about sci names, even though the American Ornithologists’ Union periodically changes common names and splits or combines species, resulting in new common (and sci) names. Our solution is to print common names beside the other ones.

Because keys are the main source for identification, this book appears to encourage people to kill and make collections of butterflies.

However, many butterflyers who enjoy butterflies alive and are happy to identify them only to subfamily or genus or, sometimes, to species (using binoculars and a net) would have been better served if photos of pinned specimens had appeared together in one section with as many similar species as possible on facing pages for comparison. How valuable it would have been to have all the skippers on two sets of facing pages instead of spread through 35 pages!

The book would also have been more user-friendly and resulted in fewer errors for the reader if the photo for the “a” couplet had always been on the left and that for the “b” couplet on the right. Going down the left-hand column of photos on p. 151, for instance, one finds b, a, b, b, b, a, b, a, a, b. One wonders why the sequence of species differs between checklist and species accounts. The treatment of “Old World and Artemisia Swallowtails” does not specify which characteristics and scientific names apply to each, nor does it state that the names are synonyms. The Mormon Fritillary is described as “our smallest fritillary.” Not so. Under Hoary Comma and Zephyr appear statements such as “It is not possible to separate (the two) in Alberta.” However, in Step 2 of the key (p. 208), the two species are separated.

Features I would like to have seen: a map of Alberta on the inside front cover with all names mentioned in the text or, at least, major collecting areas. An outline of Alberta on the North American map. With each species, a listing of common names found in the Audubon, Peterson and Manitoba field guides that most prairie province butterflyers have been using for a long time.^{2,3,4}

Alberta Butterflies treats all but 19 of Saskatchewan's species and all but 45 of Manitoba's. For British Columbia, it covers all but five species within 150 km of Alberta and it deals with 157 of Montana's 189 species. It is a must for butterflyers in Alberta and Saskatchewan and a "best buy" (or best gift) for every butterflyer in western Canada and adjacent states.

1. NORTH AMERICAN BUTTERFLY ASSOCIATION. 1995. Checklist & English names of North American butterflies. NABA, Morristown, NJ. 43 pp.
2. Klassen, Paul, A.R. Westwood, W.B. Preston and W.B. McKillop. 1989. The butterflies of Manitoba. Manitoba Museum of Man and Nature, Winnipeg, MB. 290 pp.
3. PYLE, R.M. 1981. Audubon field guide to North American butterflies. Knopf, New York. 924 pp.
4. TILDEN, J.W. and A.C. SMITH. 1986. Field guide to western butterflies. Houghton Mifflin, Boston. 370 pp.

- Reviewed by *Bernie Gollop*, 2202 York Ave., Saskatoon, SK. S7J 1J1 and *Mike Gollop*, 51 Welker Crescent, Saskatoon, SK. S7H 3M3

GREAT NORTHERN FORESTS and PRAIRIE GRASSLANDS — WIND COUNTRY

Karvonen Films Ltd. and the National Film Board of Canada. 48 min. \$26.95. Phone 1-800-267-7710.

Great Northern Forests is an award-winning nature documentary created by Albert Karvonen. He explores the boreal forest of Western Canada, showing that the boreal forest, arguably the largest ecosystem in the world, is shaped by two forces — fire and winter. These forces determine the species occurring in this ecosystem. This video features very good footage and at times spectacular shots of various wildlife species.

The video concentrates on the common mammals and birds of the forest and to a lesser extent on the trees and herbs of the forest. The video is a good overview of this ecosystem, introducing common forest animals such as Moose, Black Bear, Red Fox, Common Loon, Bald Eagle and Great Gray Owl. Also, bogs are introduced and strategies for winter survival are explored including hibernation and scavenging. The video shows the ecosystem in its pristine condition. A short segment raising questions of ecosystem degradation from oil exploration and forestry operations occurs at the end posing the question how long will the boreal ecosystem continue to function with these pressures?

Prairie Grasslands — Wind Country portrays the grasslands of Canada. It has also won several awards. Highlighted are the forces that create the grasslands — lack of rainfall, fire and winter. Over 40 species of mammals, birds and plants of the plains are shown including: Mule Deer, Coyote, Sage Grouse, Bison, Golden Eagle, Swift Fox, Prairie Dog, Badger, Sage Grouse and Sharp-tailed Grouse. The footage is very good, at times spectacular and an accurate portrayal of Canadian prairie. However by showing footage of Swift Fox, Bison, and Prairie Dogs, the video is more of a historical account of the prairies than a current view as these species are now atypical of Canadian prairies. Karvonen points out that two-thirds of the prairies have been lost to agriculture and that this ecosystem is a shadow of its former glory.

These award-winning videos are good quality and portray western Canada's boreal forest and grasslands. The visual images and sounds would be enjoyed by all age groups at all



Grease River (upper) and Straight River (lower) confluence

Chris Adam

levels of expertise of our natural environment. The commentary deals with the basic characteristics of these ecosystems and is suitable for students from grade six to high school studying ecosystems. The videos would also serve as a good

introduction for anyone who is not familiar with the boreal forest or grassland ecosystems. I thoroughly enjoyed watching both videos.

- Reviewed by *John Pollock*, Box 353, Whitewood, SK. S0G 5C0



I was intrigued by the circumstance that social insects, the group on which I have spent most of my life, are among the most abundant of all organisms. And among the social insects, the dominant subgroup is the ants. They range 20,000 or more species strong from the Arctic Circle to the tip of South America. In the Amazon rain forest they compose more than 10 percent of the biomass of all animals. This means that if you were to collect, dry out, and weigh every animal in a piece of forest, from monkeys and birds down to mites and roundworms, at least 10 percent would consist of these insects alone. Ants make up almost half of the insect biomass overall and 70 percent of the individual insects found in the treetops. They are only slightly less abundant in grasslands, deserts, and temperate forests throughout the rest of the world. *E.O. Wilson, E.O. 1992. The diversity of life. W.W. Norton and Company, New York.*

IN MEMORIAM

ALFRED HEBER MARSH, 1927-1992

CHARLES D. BIRD, Box 22, Erskine, AB. T0C 1G0

A dear friend, and outstanding naturalist, passed away recently after a long spell with Parkinson's disease. "Fred" Marsh was a quiet and unassuming person. At the same time he was well read and had an innate and comprehensive understanding of ecology. Fred was, over the years, a solid and stalwart worker on many scientific projects. He was unexcelled in the field, never complaining about tribulations like biting flies or long working hours; at the same time he was very good at plant identification and technical work in the lab, and a patient and meticulous writer and proof-reader.

Fred was named after his father, Alfred Finnis Marsh, who was born 31 October 1890, in Northfleet, Kent, England. Mr. Marsh received his early education in England and later graduated from the Wesleyan Theological College, Montreal, and was ordained in St. James Methodist Church, Montreal in 1919. Rev. Marsh served as a minister at the United Church Mission in Twillingate, Newfoundland. After ordination, he served at charges in Ontario (Eden Grove 1920, Niagara on the Lake 1922-24, Nassageya 1925, Eden Mills & Arkell 1925-28, Bruce Pres. 1929, Paisley 1930-32 and Mimico 1933-37). He was minister at Edmonton Central 1938-1944, then at Hillhurst United in Calgary from 1944-58, and finally for a year or two in Burnaby, B.C. Rev. Marsh received an Honorary Doctor of Divinity Degree from St. Stephen's College in 1952. Dr. Marsh retired in

1958 and moved to Haney, B.C. He died there 22 December 1963 (Douglas Walkington, Methodist Ministers in Canada). He was hard working, sincere, honest and did more than his duty in the church (Mary Lore).

Rev. Marsh married Gertrude Dovey of Preeceville, Saskatchewan about 1925. Fred, their first child, was born 7 April 1927. A second child, a girl, was born not long after but she died. While Dr. Marsh was somewhat austere, Gertrude was more open and fun-loving. After her husband died, she hoped that Fred would live with her in her home at 539-48th Ave. SW, Calgary but he was used to his independence by then so he lived nearby, but apart. In her later years, Gertrude developed a debilitating illness which effected her memory and she required nursing help. George Scotter comments "In the spring of 1977 Fred returned to Calgary to tend his ailing mother... She did a lot of strange things of danger to herself and others. To some extent, Fred sacrificed his career to assist his mother — a noble cause." Gertrude died 9 March 1985 (*The Observer*, June 1985).

Fred grew up in Calgary and attended Crescent Heights High School, 1941-45. He took the first year in a B.Sc. program at the University of Alberta, 1945-46. Fred attended the University of Idaho in Moscow from 7 February 1952 to 6 June 1954 earning a M.Sc. degree, majoring in Wildlife Management and

minoring in Forest Management. Fred was employed as a photography technician for Calgary Television from 1956-60. He worked as a technician for the Canadian Forestry Service from 1960-67, working in the field and out of their Calgary office. He worked as my research assistant, both in the Herbarium at the University of Calgary and in the field, from 1970-79. Fred was an able assistant in a number of University Extension courses that I taught during this period on the plants of southern Alberta. He was well liked by the students and was a patient and effective teacher. He also went out of his way to befriend and assist graduate students and others that worked in the Herbarium. During the summers of 1974-76 he worked in the Nahanni with Dr. George Scotter of the Canadian Wildlife Service. After I left the University, he spent a summer with Roy Strang of the Canadian Forest Service researching the effects of forest fires in the Mackenzie River Valley and another summer studying waterfowl nesting habitat in central Alberta with the Canadian Wildlife Service. Fred worked with Dr. Stephen Herrero of the Faculty of Environmental Design at the University of Calgary from 1977-81. Dr. Herrero comments: "He worked largely as an unpaid volunteer yet contributed tremendously to understanding the fire history of the Cascade Valley. Fred, myself and the rest of my crew — Chuck Blyth, Tim Toth, David Hamer, all got on well. Fred's independent spirit fit perfectly with ours. I mention this partly because it is a fond memory and also because some regarded Fred as unusual. To us he was a gem. I'll miss but won't forget him." Fred was a contributing writer on botanical topics for *The Canadian Encyclopedia* published by Hurtig in 1985. He was employed with Caretaking and Building Services of the University of Calgary

from 1981 until his retirement on 30 April 1992. He first felt the effects of Parkinson's about 1988. Medication helped alleviate the symptoms but his health gradually declined, ending in his death 31 May 1992. He was buried in Queen's Park Cemetery.

Fred's hobbies included wood-working, hiking, skiing and photography. He was a member of the Canadian Parks and Wilderness Association and the Alberta Wilderness Association. Though he never married and had a family of his own, he was fond of children. John Watson comments: "He loved to help some of our staff's children here at the University of Calgary; he was a tremendous support to those with language difficulties." I do not recall Fred ever smoking, drinking or using profane language. Though he did not attend church often, he had a deep belief in Christianity. George Scotter describes him as "very much a gentleman." Fred will be deeply missed by those that knew him.

The writer appreciates help given by Mary Lore, John Watson, George Scotter, Stephen Herrero, Derek Johnson, Beryl Hallworth and by his wife, Ann, and son John in writing this obituary. Thanks are also extended to Ian Mason, Archives Technician with the United Church Archives, Victoria University, Toronto.

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Alfred H. Marsh, Plains of Abraham, NWT, 1 June 1971

C.D. Bird



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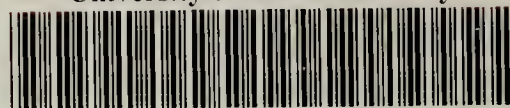
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